

PREJUDICIAL COUNSEL:  
A MULTIDIMENSIONAL STUDY OF TACTICAL AIRPOWER  
BETWEEN THE KOREAN AND VIETNAM WARS

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## **DISCLAIMER**

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

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## *Abstract*

This study analyzes the Air Force's decisions made concerning the advancement of tactical conventional airpower from 1953 to 1961. This thesis evaluates the decision-making process at three distinct levels using Graham T. Allison's three decision-making models. First, this study examines Air Force decision-making based upon grand-strategic, systemic issues to conclude that tactical conventional airpower was given second priority to the dominant policy of strategic nuclear missions as a consequence of President Eisenhower's desire to balance the federal budget while deterring the Soviet Union. Second, an evaluation of organizational decision-making within the various units that contributed to the advancement of tactical airpower reveals that despite the lower level of emphasis, tactical airpower was not entirely neglected. Third, this paper highlights how senior Air Force individuals in key positions provided prejudiced counsel, which steered national command authorities toward the continuation of the strategy of Massive Retaliation and the subsequent repression of tactical conventional airpower. The final section of this study ties all three levels of examination together to create a comprehensive understanding of how Air Force decision-making, based predominantly on key individual's biases, impeded the advancement of tactical airpower between the Korean and Vietnam Wars. This impediment resulted in a greater loss of lives and resources during the opening months of the Vietnam War.

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## Chapter 1

### Introduction

The Vietnam War was enormously expensive in terms of national treasure spent, both human and material. For the United States Air Force (USAF), the failure to “win” in Vietnam left a legacy that would not be removed until the Persian Gulf War almost twenty years later. Much of the criticism leveled at the Air Force since Vietnam has focused on the decisions made by senior leaders in the aftermath of World War Two, which allegedly left the Air Force unprepared for a limited war, especially with respect to tactical aviation. Is this an accurate assessment; did the Air Force consciously and deliberately degrade its tactical airpower following World War Two and leading up to the Vietnam War? The purpose of this study is to examine the decisions made between 1953 and 1961 in order to arrive at certain conclusions regarding whether and to what extent the US Air Force indeed neglected tactical airpower between Korea and Vietnam.

Carl von Clausewitz’s often repeated axiom “war is nothing but the continuation of policy with other means” is as true now as when it was penned almost two centuries ago.<sup>1</sup> Political objectives have governed military campaigns and have oftentimes set the stage for success or failure. America has experienced both competent and inferior policy, which has influenced the outcome of military campaigns. On the policy/war interaction

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<sup>1</sup> Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1976), 75.

spectrum, the Vietnam War remains the most recent example of how not to run a war. Poor policy is but one reason why Vietnam represents the nadir of military (and specifically, US airpower) effectiveness. Inadequate command and control, fighter aircraft, munitions, and tactics at the onset of Operation ROLLING THUNDER also constrained the effective application of airpower in this limited conflict.

In November 1961, the United States Air Force deployed 154 men and sixteen aircraft to Bien Hoa Air Base in South Vietnam to support and train the South Vietnamese Air Force (VNAF).<sup>2</sup> This was the beginning of a gradual five-year increase in the number of resources deployed and in the level of intensity of operations in the Southeast Asian conflict. This “gradualism” was one of the many factors that ultimately caused the pullout of all military forces and the fall of Saigon in June of 1975. The United States lost over 58,000 personnel and invested over 150 billions dollars in the Vietnam War only to turn its back and walk away from the conflict without achieving its ultimate objectives of countering the communist aggression and ensuring the sovereignty of the South Vietnamese government.<sup>3</sup>

For the United States Air Force, the number of munitions and aircraft employed was impressive, but the outcome was far from ideal. Of the eight million tons of munitions that fell on Southeast Asia between 1962 and 1972, more than half were dropped on South Vietnam, less than one million were released over North Vietnam, and over two million tons were dropped on Laos.<sup>4</sup> Of the eight million tons, 80 percent were dropped by the Air Force. A great majority of those bombs were general purpose or “dumb”

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<sup>2</sup> John J. Sbrega, “Southeast Asia” in Benjamin Franklin Cooling, ed., *Case Studies in the Development of Close Air Support* (Washington D.C., U.S. Government Printing Office, 1990) 420.

<sup>3</sup> Benjamin S. Lambeth, *The Transformation of American Air Power* (Ithaca, NY: Cornell University Press, 2000), 13.

bombs that fell on jungle targets and failed to prevent both the “Tet” offensive in 1968 and the “Easter” offensive in 1972. That failure was not due to a lack of tactical airpower or conventional munitions. At the peak of Vietnam, the Air Force had one half of all its existing fighters in Southeast Asia.<sup>5</sup> The immense USAF effort in this “limited” war contributed to substantial losses. During the war, the USAF lost 383 of its total F-105 inventory (833).<sup>6</sup> Overall, the Air Force lost 2,257 aircraft and more than 2,700 men died. Of the 1,737 aircraft lost in combat over North Vietnam, the Air Force rescued 358 men, had 49 men die, had 293 remain prisoners of war (POW), and listed 364 men as missing in action.<sup>7</sup> The Vietnam War was also the first war in which American pilots did not possess a decisive advantage in ratio of air-to-air kills.

The United States Air Force’s actions during the period 1953 to 1961 contributed to its preparedness to employ tactical airpower in Vietnam. In peacetime, military institutions are required to speculate on future threats and conflicts that may face the United States. Fog and friction exist not only in war, but also during peacetime. To paraphrase Clausewitz, fog is the inability to perceive the essence of a situation and friction is the force that makes what appears “easy” so difficult. The inability to pierce the fog of determining future threats and to overcome the friction in peacetime force procurement decisions limits the military capability to prepare for war. Adequate preparations in peacetime are as critical to reducing the loss of treasure and lives in wartime, as is the proper employment of military forces in wartime.

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<sup>4</sup> Wayne Thompson, *To Hanoi and Back* (Washington D.C.: Smithsonian Institute Press, 2000) 5.

<sup>5</sup> Earl H. Tilford, *Setup: What the Air Force Did in Vietnam and Why* (Maxwell AFB, Ala: Air University Press, 1991) xvii.

<sup>6</sup> Lambeth, 13.

<sup>7</sup> Thompson, 310 – 312.

Therefore, in peacetime, USAF leadership must strive to correctly anticipate the myriad of threats and potential conflicts that could arise. From a detailed analysis, the Air Force must develop and procure capabilities to contend with the widest possible spectrum of conflict. This process is extremely difficult due to the inability of humans to peer into the future, but nonetheless, it is critical that it be attempted. It is also imperative that the Air Force implement a coherent policy from its analysis in order to mold airpower to meet the anticipated challenges. If incorrect analysis or overemphasis on one strategy occurs, then it is possible to be inadequately prepared for war.

Since the commencement of the Vietnam War, military historians and senior USAF leaders have lamented the unpreparedness of the Air Force in the early 1960s to wage a limited war employing tactical airpower (limited by the amount of force applied based on political restrictions imposed, number of assets and nations involved, or ends sought).<sup>8</sup> Is it accurate to assert that the USAF was unprepared to conduct limited military operations using tactical airpower? Did the Air Force lack the tactical aircraft, conventional munitions, and training required to conduct a limited war? Moreover, did the United States Air Force impede the development and employment of tactical airpower during the years leading up to the Vietnam? Although the answers often vary, the true answers to these questions cannot be found without conducting a multi-layered analysis of the USAF decision-making process employed in the decade prior to Vietnam. In this paper, I will conduct a detailed examination of the decision-making process used from 1953 to 1961 to answer these questions.

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<sup>8</sup> In 1968, USAF Chief of Staff General John P. McConnell stated that the Air Force was unprepared and had done little with respect to pushing tactical aviation issues until 1961 or 1962. USAF, "Project Corona Harvest: USAF Activities in Southeast Asia, 1954-64," located at the United States Air Force Historical Research Agency, Maxwell AFB, Ala, call number K239.034-1.

This essay is a contribution to the general field of military analysis of peacetime preparations for war and institutional responses to challenges imposed by those preparations. I will answer the question: did the USAF properly develop and employ tactical airpower between the Korean and Vietnam Wars? To answer this question fully and accurately, I will analyze the United States Air Force decision-making process during this period at three different, but overlapping levels.<sup>9</sup> In the following chapter, I will briefly elaborate on the strategic contextual factors that shaped the years leading to up “Pre-Vietnam” period. In Chapter Three, I will expound upon the first level of the analysis, Model I—systemic level examination of the Air Force decision-making process as it applied to satisfying United States political and military strategy and the impact of those strategies on the development of tactical airpower. In Chapter Four, I will focus on the second level of analysis, Model II—the organizational level decision-making process within the Air Force regarding tactical airpower. In Chapter Five, I will investigate the third level of inquisition, Model III--the senior Air Force leaders who influenced the direction of the Air Force programs and who advised the national command authorities. In the final chapter, I will conclude this thesis with a summary of the areas where the Air Force advanced tactical airpower and areas where tactical airpower was impeded from development or employment. In this final chapter, I will also discuss the implications of this essay.

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<sup>9</sup> For this paper, I rely on the three models of decision-making analysis as developed by Graham T. Allison for his discussion of the decision-making process of the Kennedy Administrations during the Cuban Missile Crisis. *Essence of Decision: Explaining the Cuban Missile Crisis*, 2d Ed. (New York: Longman Publishing, 1999).

## Qualifications and Significance

I do not intend herein to determine how well or how poorly airpower was employed as a coercive tool of diplomacy, nor do I mean to discuss a theory of airpower. Similarly, I do not intend to scrutinize the political and military leadership's conduct in the Vietnam War. Much has already written on that subject.<sup>10</sup> Without a doubt, a plethora of restrictions on the application of airpower were in place during the war (primarily from the Gulf of Tonkin incident in August 1964 to the Tet Offensive in 1968). Rather, my intention is to analyze the decision-making process within the United States Air Force as it related to the development and procurement of tactical, conventional airpower.

For my purposes, *Tactical Airpower* is defined as the conventional (non-nuclear) combat capability that could contribute to defeating of an adversary's military strategy. This conventional capability includes the missions of air superiority, aerial interdiction, close air support, and tactical reconnaissance. I purposely neglect a discussion on the development and procurement of tactical airlift. Furthermore, I specifically avoid strategic (i.e., nuclear) bombers of the time. Both the terms "tactical" and "strategic" actually refer to a level of warfare, but in the 1950s, "tactical" referred to fighter and "strategic" referred to the nuclear, long-range bombers. My purpose is not to argue for a new lexicon, but to focus on "tactical airpower" as it was considered then.

As with many historical essays, this paper is envisioned to inform all Air Force officers concerning the significance of proper peacetime planning. First, every Air Force

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<sup>10</sup> For a detailed discussion of the Vietnam War and the conduct of senior American leadership's involvement, see Wayne Thompson, *To Hanoi and Back: The U.S. Air Force and North Vietnam, 1966 - 1973* (Washington D.C.: Smithsonian Institution Press, 2000) and H. R. McMaster, *Dereliction of Duty* (New York: Harper Collins, 1997).



officer should have some comprehension of the facts that led up to “America’s Longest War” and the nadir of tactical airpower employment. Second, mid- and senior-level officers that have an input to the development of military strategy or the procurement of airpower assets should understand both the strengths and weaknesses in the Air Force’s 1950s decision-making process. By synthesizing the lessons learned in this thesis, Air Force officers may avoid the mistakes made prior to Vietnam. When studying lesson learned, it is imperative that those lessons are understood within the context that they were derived so that the lessons will not be misapplied. Third, this thesis should demonstrate to the young Air Force officers that when attempting to answer historical questions, only by fully analyzing the problem at multiple levels could one find the best answers. Although much more can be written about this topic, my intent is to convey only enough of the facts to make my case.

To assess the validity of my findings, I have established the following measurement to determine whether USAF decision-making advanced or impeded the development and employment of tactical airpower during the period in question. If the result of an Air Force decision contributed to additions in or improvements to (1) tactical aircraft employed in a conventional mission (i.e., aerial interdiction), (2) conventional munitions (air-to-ground and air-to-air), or (3) tactics to deliver conventional munitions, then that decision would indicate that the Air Force was advancing tactical airpower. Conversely, if the results of an Air Force decision did not contribute to or adversely influenced one of the three areas listed above, then that decision could be viewed as having a negative impact on tactical airpower. In either positive or negative case, the result of the decision must be large enough in scope so as to apply to a majority of at least one particular

tactical airpower mission. For example, the effect of changes in aircraft armament may or may not be significant enough to demonstrate the advancement or impediment of tactical airpower. The decision to switch from 50-caliber to 20 mm ammunition had only a minor impact overall and therefore, would not be considered as an advancement in this paper. However, the decision to develop more and better precision-guided munitions for missions “fraggd” to destroy hard targets such as bridges would be considered an advancement in conventional tactical airpower. For each instance discussed in this paper, the contextual factors must be kept in mind in order to determine just how significant an Air Force decision was in relation to the effect it had on tactical airpower at the beginning of Vietnam.

## **Chapter 2**

### **Strategic Context**

The events immediately following World War Two and continuing through the Korean War directly affected Air Force senior decision-making. The intent of this chapter is to elaborate on the strategic contextual factors immediately following World War Two that led up to the Korean War and then lightly touch on the primary events in the Korean War that influenced airpower's development during the 1950s. Much has been written about the Korean War and my intent is not to regurgitate that material here.<sup>11</sup> Rather, the purpose of this chapter is to provide a general understanding of the dynamics that shaped the USAF decision-making process of the 1950s.

#### **Strategic Contextual Factors – Pre-Korea**

Following the surrender of Japan in World War Two, the atomic bomb acquired extremely important strategic implications. For the United States Air Force, the lesson learned from the dropping of the atomic bombs on Hiroshima and Nagasaki was that a well-planned and well-executed strategic bombardment strike could force an adversary to capitulate. During World War Two, airpower theory was piloted by the strategic

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<sup>11</sup> For detailed information leading up to the Korean War and the war itself see: Walton S. Moody, *Building the Strategic Air Force* (Washington D.C.: Office of Air Force History, 1996); Harry Borowski, *A Hollow Threat: Strategic Air Power and Containment Before Korea* (Westwood, CT: Greenwood Press, 1982); Willaim Stueck, *The Korean War: An International History* (Princeton: Princeton University Press, 1995);

bombardment advocates who professed that the principal way for airpower to achieve critical effects was through strategic attack of a nation's vital industrial centers. These advocates opined that tactical airpower should support ground forces in times of dire need and that the bulk of airpower should be devoted to the strategic endeavor. Strategic bombardment could produce the quick and decisive results advocated by many of the early airpower theorists, such as Giulio Douhet and William "Billy" Mitchell. Moreover, atomic weapons delivered by USAF "strategic" bombers fit nicely into a post-World War Two American airpower theory and national security policy.

In the aftermath of World War Two, the United States military quickly drew its forces down. The German and Japanese threats were destroyed and the US populace was eager to have the economy and their lives return to "normal." The amazingly fast demobilization shattered the Air Force. The Army Air Forces stood at 2,253,000 on V-J Day (14 August 1945), but only had 303,000 by the end of May 1947. Similarly, flying units fell from 218 combat-ready groups to two by December 1946.<sup>12</sup> The 1947 Department of Defense (DoD) budget was a meager \$14.4 billion compared to the 1945 World War Two budget of over \$79.8 billion.<sup>13</sup> The Air Force received slightly greater than one-third of the 1947 DoD budget (approximately \$5.025 billion).<sup>14</sup> President Harry S. Truman was adamant about maintaining the diminutive defense budget. The President's priority was to contend with US domestic issues anticipating no immediate military threat. That would soon change.

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Robert F. Futrell, *The United States Air Force in Korea, 1950 – 1953* Revised Ed., (Washington D.C.: United States Government Printing Office, 1983).

<sup>12</sup> Alfred Goldberg, ed., *A History of the United States Air Force, 1907 – 1957* (Princeton: D. Van Nostrand, 1957), 105.

<sup>13</sup> *Department of Defense Fact Book: 1947 – 1978* (Washington D.C.: United States Government Printing Office, 1978), 31.

On 24 June 1948, Soviet forces blocked all rail and road avenues from West Germany to Berlin in East Germany. The United States' response was to quickly commence an aerial supply effort to ensure friendly personnel in Berlin would not starve. The Soviet Union (USSR) was serious about attempting to force the allied powers out of Berlin. "Operation Vittles" succeeded in supplying over 2,325 million tons of food, fuel, and supplies into Berlin over eleven months and proved that the United States was also serious, thus demonstrating its resolve to stand up to Soviet aggression.<sup>15</sup> The Berlin airlift also portended future US/USSR confrontations.

By 1948, the Soviet Union was unquestionably the foreseeable principal threat to the United States. Unlike the United States, the Soviets did not draw down its forces in Eastern Europe. They maintained a conventional force of 175 divisions poised to attack.<sup>16</sup> The newly formed North Atlantic Treaty Organization (NATO) consisted of the countries of Western Europe and the United States, none of which possessed the financial or political will to match the Soviet military threat. The growing US atomic arsenal was thought to counterbalance Soviet conventional military power in Europe. Moreover, relying on atomic weapons for deterrence was deemed less expensive than trying to build up a conventional force to counter the Soviet Union. In addition to the economic aspect mentioned, atomic weapons fit nicely into current airpower theory and doctrine. To Air Force leaders, the atomic bomb's destructive potential gave credence to the theory that a strategic attack at the commencement of hostilities could decide a war's outcome prior to

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<sup>14</sup> Phillip S. Meilinger, *Hoyt S. Vandenberg: The Life of a General* (Bloomington, Ind: Indiana University Press, 1989), 141.

<sup>15</sup> Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force 1907 – 1960* (Maxwell AFB, Ala: Air University Press, 1989), 236 (hereafter cited as Futrell, *Ideas*).

<sup>16</sup> The 175 divisions were incorrectly estimated resulting in a threat that was significantly less than reality. David N. Schwartz, *NATO's Atomic Dilemmas* (Washington D.C.: The Brookings Institution, 1983), 3.

mobilization of surface forces. USAF war plans continued to stress the striking of “essential” elements of an enemy’s economy as was professed both before and during World War Two. These planners also comprehended that, even though the destruction from atomic bombs would encompass a area greater than the intended target, the planners refused to make population centers their primary targets.<sup>17</sup>

Under the limits of the \$14.4 billion defense budget, the USAF sought to define a decisive mission. In December 1948, it established the Continental Air Command (ConAC), which included the resources of Air Defense Command (ADC) and Tactical Air Command (TAC). In conjunction with Strategic Air Command’s (SAC) forces, the Air Force believed it was postured to contend with any external threat. Given the paucity of resources, the USAF stated its mission, as:

“(a) initially, to launch a powerful air offensive designed to exploit the destructive and psychological power of atomic weapons against the vital elements of the Soviet war-making capacity. (b) To provide on an austerity basis for the air defense of the United States and selected base areas. (c) To provide the components necessary for the advancement, intensification, and/or diversification of our initial offensive until forces generated from inadequate mobilization bases have become available.”<sup>18</sup>

The USAF used the “atomic” mission to fight for a larger share of the DoD budget and the procurement of the B-36 Bomber. In 1947, the USAF only had 27 B-29 bombers capable of delivery atomic weapons, which were larger and heavier than non-atomic munitions. According to the Commander of SAC, General Curtis LeMay, the B-36 could form a strategic force that could be “capable of attacking any target in Eurasia from bases

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<sup>17</sup> Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York: The Free Press, 1989), 11.

<sup>18</sup> Futrell, *Ideas*, 242.

in the United States and returning to points of take-off.”<sup>19</sup> By developing the B-36, the Air Force could avoid the need of the overseas bases required for the B-29s.

The development of the B-36s resulted in a heated debate between the Navy and the Air Force. At that time, the Navy detected an opportunity to acquire a piece of the atomic” pie” by developing the first flush-top 65,000 ton carrier to launch and recover heavy, multi-engine bombers capable of carrying atomic weapons. The Air Force viewed this “super” carrier as a infringement on it mission of strategic bombardment. On 3 April 1949, Secretary of Defense Louis Johnson reacting to pressures to cut defense spending, eliminated the USS *United States*, five days after its keel was laid.<sup>20</sup> This cancellation caused the “revolt of the admirals,” in which the Navy charged senior Air Force leadership with conflict of interests in the procurement decision of the B-36. Secretary of the Navy Sullivan resigned in protest. The Navy’s attempt to discredit the Air Force and the B-36 was ultimately found baseless by the House Armed Services Committee and caused the removal of the Chief of Naval Operations, Admiral Denfeld.<sup>21</sup>

### **Soviets, Atomic Weapons, and the USAF**

In 1949, the United States’ monopoly on atomic weapons was broken. On September 3, 1949, a US weather reconnaissance aircraft picked up an unusually high level of radioactivity over the North Pacific.<sup>22</sup> The Soviet Union had detonated its first atomic bomb and had joined America in the atomic weapons arms race. No longer were US atomic weapons seen primarily as a deterrent for only conventional war, but now they were also seen as essential to destroying the Soviet’s atomic capability. America now

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<sup>19</sup> Earl H. Tilford, Jr. *What the Air Force Did in Vietnam and Why* (Maxwell AFB, Ala: Air University Press, 1991), 11.

<sup>20</sup> “Carrier Off—Sullivan Quits,” *Aviation Week* (May 1949), 7.

required a robust atomic capability to deter potential Soviet atomic attacks. The Air Force's strategic bomber force would quickly become the backbone of United States' military deterrent policy.

Although the USAF used the policy of strategic atomic bombardment to establish the primacy of its mission and its service within the DoD, it still understood that strategic bombardment might not win wars alone. USAF Chief of Staff, General Hoyt S. Vandenberg testified before a US House of Representative Committee on Armed Services stating,

“Lest this statement be again tortured into a declaration that strategic bombardment can win war alone, let me restate my belief that if a future war comes ultimately it must be concluded on the ground, like most of the wars of the past. But it is the objective of the strategic bombardment program—an objective which has been proved in battle—so to weaken the sustaining sources of enemy troops that they can be defeated in less time at less cost.”<sup>23</sup>

General Vandenberg understood that although strategic atomic bombardment was the mainstay of deterrence, tactical airpower was also necessary for success once hostilities commenced. Unfortunately, the DoD budget precluded the Air Force from procuring an adequate number of both strategic bombers and tactical fighters. The Air Force was forced to choose and that choice was based on the “worst case” threat scenario—a Soviet attack into Western Europe. In order to contend with such an enormous threat, US atomic weapons were necessary to offset the perceived military imbalance. The fact that the Soviets now had atomic weapons only furthered the Air Force's push to build more bombers and atomic weapons.

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<sup>21</sup> Meilinger, 130 - 137.

<sup>22</sup> Ibid., 150.



## **The Impact of a Declining Defense Budget**

In 1949, the Air Force was forced to cutback its planned objective of 70 groups to 48 groups, which seriously degraded its capability to support ground forces in any future offensive. F-80, F-84, and F-86 fighter aircraft were to be the primary US tactical jet fighters for the near future. When, the Air Force drew down to 48 groups, it was forced to cancel 51 B-45 light bombers, 118 F-93 fighters, and 30 C-125B assault transports, which freed up approximately \$270 million.<sup>24</sup> This ancillary money was devoted to purchasing 32 additional B-36s and 7 RB-36s and to modifying existing B-36s with jet engines. In March of that year, senior Air Force leaders accepted the B-52 as the follow-on replacement for the B-36. The F-86 would remain the best interim fighter for the foreseeable future.

In January 1950, President Truman directed the Secretaries of State and Defense to review the political and national military strategy in light of the new Soviet atomic threat. As a result of the review, the National Security Council (NSC) recommended (NSC-68) that the United States begin immediately building up its military strength in order to deter Soviet aggression and general war.<sup>25</sup> The recommendation estimated that it would take approximately \$50 billion per year for the next several years. President Truman discounted the recommendation and attempted to limit the 1951 fiscal year military budget to \$15 billion and the 1952 to \$13 billion. General Vandenberg would not allow the United States to be caught short of being able to fight a total war with the Soviet

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<sup>23</sup> House, *Hearings before the House of Representatives Committee on Armed Services*, 81<sup>st</sup> Congr., October 1949, Statement by USAF Chief of Staff General Hoyt S. Vandenberg, on The National Defense Program - Unification and Strategy, extract.

<sup>24</sup> Futrell, *Ideas*, 244.

<sup>25</sup> Robert F. Futrell, "The Influence of the Air Power Concept on Air Force Planning, 1945 – 1962, in Lt Col Harry R. Borowski, USAF, ed. *Military Planning in the Twentieth Century* (Washington D.C.: US Government Printing Office, 1984) 261 (hereafter cited as Futrell, *Influence*).

Union. As a result of the stated threat and the miniscule defense budget, the strategic bombers would continue to receive the priority of funding while tactical airpower was relegated to second-string status. The budgetary dilemma became a moot point the minute North Korea invaded South Korea. Much more than \$15 billion would be needed to halt the advancement of communism on the Korean peninsula. In fact, the DoD budget would swell to over \$43 billion by 1953, with the Air Force alone receiving more than \$15 billion.<sup>26</sup>

### **The Strategic Contextual Factors – The Korean War**

On June 25, 1950, the North Koreans invaded South Korea and caught the United States off guard and unprepared for war. At that time, the United States had declared that the Republic of Korea (ROK) lay outside the declared perimeter of US military influence. At the outbreak of war, the Air Force possessed forty-eight aircraft wings and 411,000 personnel.<sup>27</sup> Given that DoD had no established war plans for Korea, the USAF scrambled to rush fighters (F-51 and F-80) from Japan to support the US and ROK ground forces that were retreating to Pusan. As the Air Force rushed support to the beleaguered ground forces, many Americans had difficulty determining what the United States' interests in Korea were. Unlike interests in World War Two, US interests were not clear in Korea. Within senior levels of the US government and the Joint Chiefs of Staff (JCS), most individuals felt that the North Koreans had to be stopped.

To fight the North Korean act of aggression, America was forced to expand its defense capabilities above and beyond the NSC-68 recommendations. On July 17,

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<sup>26</sup> *Department of Defense Fact Book, 1947 – 1978*, 31.

<sup>27</sup> Meilinger, 193.

Secretary of Defense Johnson approved an increase of ten more combat wings and 50,000 additional personnel for the Air Force.<sup>28</sup> President Truman subsequently approved the Air Force's request to increase to seventy-one wings by June 1951.<sup>29</sup> The JCS unanimously agreed by the end of October that the Air Force should expand to 143 wings. More than half of these wings were to be directed for the strategic air offensive.

As the fighting continued on the Korean peninsula, many senior US State and Defense officials believed that Korea was the beginning of World War Three. These officials thought that Korea was a distraction and the “real war” would entail a Soviet invasion of Europe. The result for the Air Force was the conservation of its vital assets (atomic-capable B-29s and B-36s) in case war broke out in Europe. That meant that forces available for use in Korea were to be limited. Likewise, US strategy was also limited in that the only politically acceptable targets for airpower would have to be in Korea. Concerned about the war escalating into a global war, President Truman felt he had to restrict the use of airpower to the Korean peninsula and prohibited attacks into China.<sup>30</sup> For the Koreans, the war was not limited—it was an all-out, total war. The Koreans were fighting in their country for the unification of the Korean people. While the struggle continued in Korea, US and NATO forces were placed on alert for the possibility of Soviet aggression in Europe. The United States' war objective at the commencement of the war was to halt and contain the communist aggression and reestablish the status quo ante border.

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<sup>28</sup> Futrell, *Influence*, 261.

<sup>29</sup> Meilinger, 193.

<sup>30</sup> Clodfelter, 13.

## **Tactical Airpower Use**

American tactical airpower was instrumental during the Korean War. If it were not for the close air support (CAS) provided to the retreating US and ROK ground forces during the first weeks of the war, the Pusan perimeter might not have held. Similarly, in September 1950, tactical fighters and B-29 bombers were vital to preparing the area surrounding South Korea's capital Seoul for General Douglas MacArthur's amphibious assault at Inchon. Seoul's Kimpo Airfield was bombed and the North Korean supply-line to the forces fighting near Pusan was cut. US airpower was essential in securing Seoul and assisting the offensive drive north of the 38<sup>th</sup> parallel. Following the successful Inchon landing, US war objectives changed to pushing the North Koreans communist forces out of Korea and reunifying the peninsula. After Chinese ground forces counter attacked across the Yalu River in November, allied forces were driven back south across the 38<sup>th</sup> parallel. Again, tactical aircraft proved invaluable to the retreating ground forces. The US war objectives changed again to now containing the Chinese forces and reestablishing the original border at the 38<sup>th</sup> parallel,

US Far East Air Forces (FEAF) tactical aircraft such as the F-51, F-80, F-84, and the B-26 initially flew CAS sorties from bases in Japan until secure airfields were established on the Korean peninsula. Close air support aircraft were aided by T-6 aircraft that had an Air Force pilot and an Army observer. The slow-moving T-6 would fly over the ground forces in order to spot enemy targets and then direct the fast-moving fighters in for the attack. Originally, the FEAF pilots who performed the CAS mission were all air

defenders for Japan and not trained in the CAS mission.<sup>31</sup> This lack of training significantly impeded the success of CAS operations. By the end of 1950, the T-6 “Mosquitoes” had directed over 90 percent of the CAS aircraft, but at a cost of 18 Air Force aircraft.<sup>32</sup> The US Marine Corps also conducted CAS missions on peninsula, but with dramatically better results. Compared to the FEAF pilots who were not trained for CAS, 70 percent of the Marine CAS pilots were World War Two CAS veterans. Concerned about the poor Air Force performance, General Vandenberg sent Major General Otto P. Weyland to the FEAF with the job of improving the tactical airpower. Weyland, who had supported Patton’s Third Army during its push across Europe in World War Two, was considered one of the Air Force’s premier experts on tactical air operations. Immediately, he and his staff instituted changes in the CAS procedures that resembled doctrinal procedures established in World War Two. As a result, CAS performance improved and by the war’s end, FEAF aircraft had flown 57,665 CAS sorties with results resembling the Marines.<sup>33</sup>

Following the CAS improvements, Weyland recommended shifting the Air Force’s emphasis to the mission of interdicting North Korean and later Chinese supply lines. With the paucity of air assets in theater, it was difficult for the FEAF Commander, Lt General George E. Stratemeyer to achieve meaningful results without consolidating all the United States’ air assets to ensure unity of effort of the available forces. One major problem was the fact that there existed three different services operating aircraft

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<sup>31</sup> Allan R. Millett, “Korea: 1950 – 1953” in Benjamin Franklin Cooling, ed. *Case Studies in the Development of Close Air Support* (Washington D.C.: United States Government Printing Office, 1990), 364.

<sup>32</sup> *Ibid.*, 365.

<sup>33</sup> Robert F. Futrell, *The United States Air Force in Korea* (Washington D.C.: US Government Printing Office, 1983), 690 (hereafter cited as Futrell, *Korea*). Compared to the USN with 35,185, the USMC with

independently in Korea: FEAF (USAF), a Marine Air Wing (USMC), and Task Force 77 (USN).<sup>34</sup> Each service demanded that it maintain control of its air assets and that prevented unified command (one of the central tenets of airpower doctrine). Regardless of the command and control problems, the Air Force greatly focused on stopping the flow of men and supplies to the front. Drawing on World War Two experience, Air Force leadership was once again trying to find a “decisive” application of airpower in which the war could be brought to an end more quickly and with less loss of treasure and men. Having already attacked all the “strategic” targets in North Korea, the FEAF sought to cut the enemy’s logistical lines of communications from China.

Prior to the stagnation of the war along the 38<sup>th</sup> parallel, tactical airpower provided much needed assistance to the outnumbered allied ground forces. The mission of interdiction proved invaluable during the strategic retreat from the Yalu, but rendered questionable results after the war stagnated. The reason for the questionable results stemmed from the fact that the North Koreans and Chinese ground forces did not require significant support through the supply lines running from the north. The US was guilty of mirror-imaging by assuming the communists required the same level and type of war-sustaining materials that the US needed. The result was several different interdiction campaigns that failed to overcome a redundant Chinese supply system that extensively used terrain, camouflage, and seemingly endless reserves of personnel to repair damages and transport supplies.<sup>35</sup> Not only did the operation fail to cut off the enemy’s supply

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32,482, and the Allies with 6,063 CAS sorties, the Air Force only flew only 43.88% of all CAS sorties during the war.

<sup>34</sup> Millett, 359; General William W. Momyer, *Air Power in Three Wars* (Maxwell AFB, Ala: Air University Press, 1978) 52 – 62.

<sup>35</sup> Eduard Mark, *Aerial Interdiction in Three Wars* (Washington D.C.: United States Government Printing Office, 1994), 317.

line, but it also failed to end the war. This incorrect perception would haunt the United States more than a decade later in the Vietnam War with similar results.

The arrival of state-of-the-art Soviet fighters to contest the Air Force's initial air superiority over North Korea also contributed to the failure of the interdiction campaigns. The latest Soviet fighter, the MiG-15, presented a formidable threat forcing the US to rush its new F-86s to counter it. Prior to the arrival of the F-86, USAF F-84s and Navy F9Fs were employed for air defense and were no match for the new MiG-15. Without the air superiority provided by the fighters, all surface forces would have operated under the potential for attack from above. Once the F-86s took to the skies over Korea, air superiority was regained to a large extent. As it was, allied ground forces encountered few or no attacks from the air in South Korea due to the poor range of the MiGs, but the bomber missions deep into "MiG Alley" in North Korea met with a different story. When the F-86 was designed, it was not envisioned to be a day, air superiority fighter, but rather a multi-purpose fighter-bomber. Although similar in performance with the MiG-15s, the F-86s managed to accumulate an impressive kill-ratio of 10:1 over the MiGs.<sup>36</sup> The reasons for its success included better training, more experienced and aggressive pilots, better tactics, and hydraulic assisted flight controls, which made aggressive maneuvers easier to perform. Unfortunately for the American airmen, the MiGs arrived in much larger numbers, overwhelming the air superiority aircraft assigned to protect the bombers.<sup>37</sup> Air superiority over the front and in South Korea was absolute (supremacy), but air superiority over the northern part of North Korea where the interdiction campaigns were conducted was questionable.

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<sup>36</sup> Futrell, *Korea*, 696.

<sup>37</sup> Mark, 313.

Many of the classic “counterair” targets, such as airfields, were beyond the Yalu River in China and were off limits to the FEAF pilots. US pilots wanted to attack the MiGs on the ground in order to eliminate the air threat once and for all. With the fear of escalating the war further and involving the Soviet Union, President Truman placed restrictions on the employment of airpower across the Yalu River and on lucrative targets such as Chinese airfields. The outcome of establishing these restrictions was a sanctuary from attack and an environment in which the Soviet Union could continue to furnish the Chinese with more MiGs without interference from the United States. With a growing number of MiGs, the Chinese were able to exact a tremendous toll on FEAF bombers. In all, the FEAF lost 57 B-29s—a figure so high that Air Force leaders decided to curtail B-29 operations in or near MiG Alley.<sup>38</sup>

The Korean War witnessed the application of several technological innovations for air combat. First, although used during World War Two, chaff (tiny strips of aluminum cut to interfere with radar waves) was employed extensively during Korea. In Korea, chaff deployed in large bundles (chaff clouds) was able to mask both fighters and bombers from surface radars that directed anti-air artillery. Unfortunately, restrictions prohibited the FEAF aircraft from employing chaff until 1951 and limited the overall effectiveness during the war.<sup>39</sup> Second, SHORAN (Short Range Radio Navigation) was utilized with great success during the war to aid aircraft attack ground targets without being able to see those targets. Both at night and in poor weather, SHORAN assisted FEAF fighters and bombers in interdicting Chinese and North Korean surface targets.<sup>40</sup>

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<sup>38</sup> Thomas C. Hone, “Korea” in Benjamin Franklin Cooling, ed. *Case Studies in the Achievement of Air Superiority* (Washington D.C.: United States Government Printing Office, 1994), 480 - 485.

<sup>39</sup> Ibid., 481.

<sup>40</sup> Ibid., 478.



Third, American aircraft began carrying IFF (Identification: Friend or Foe) transponders, which improved FEAF fighters' ability to distinguish hostile aircraft. Fourth, although not used as often as pilots would have liked, ECM (electronic counter measures) were available and sparingly used against Korean and Chinese radars. The limitation on the use of ECM was primarily a result of fears that the Soviets would learn about the US ECM and develop a counter to it. Any ECCM (electronic counter-counter measure) would negate the American strategic bombers' capability to penetrate Soviet airspace if such a need arose.<sup>41</sup> When ECM was employed against the Chinese, the communists successfully developed ECCM techniques to oppose FEAF ECM. Overall, these various technologies improved the capability of FEAF aircraft to employ in a complex, "limited" war against the North Koreans and Chinese.

### **Nuclear Options**

When the Chinese pushed south in mass, the United States contemplated the use of atomic bombs to stop their advance. President Truman's intimation of atomic weapon use prompted British Prime Minister Clement Attlee to hurry to the White House to head off any likely employment.<sup>42</sup> The British Prime Minister echoed the views of many world leaders' view that the escalation of the war to include atomic weapons may provoke the Soviets into the war on the side of the Chinese. Fear of a similar atomic response from the Soviets may launch World War Three. President Truman responded to Attlee's visit by announcing that only the President could authorize the use of atomic weapons, thus comforting the world with the belief that this limited war would not escalate into a total war using atomic weapons.

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<sup>41</sup> Ibid., 481.

The stalemate at the 38<sup>th</sup> parallel and the Korean War in general was a contentious issue in the 1952 presidential race. Dwight D. Eisenhower won with the promise of a balanced budget and an end to the Korean War. Frustrated with negotiations with the North Koreans and Chinese and seeing the mounting casualties, Eisenhower secretly threatened China with an atomic attack if armistice negotiations did not produce results.<sup>43</sup> President Eisenhower, unlike many military leaders, did not believe that an atomic war with the Soviet Union loomed on the horizon. He did not believe that 1954 would be the “year of maximum danger,” the time NSC-68 postulated for a likely Soviet attack. With the threatening of an atomic attack and the death of Soviet Premier Josef Stalin in March 1953, Eisenhower was able to persuade the Chinese to sign an armistice in July 1953.

### **Lessons Learned Form the War**

With the signing of the Armistice agreement, hostilities ceased and the United States Air Force began to analyze the war for lessons learned. America had over 34, 000 personnel killed in action and 105,000 wounded. The Far East Air Forces flew 720,980 sorties delivering 476,000 tons of ordnance against the enemy. FEAF lost 1, 466 aircraft while suffering 1,729 casualties, including 1,144 dead, 306 wounded, 30 missing men who returned to military control, 214 prisoners of war, and 35 men held captive and not returned until June 1954.<sup>44</sup> Although not prepared, equipped, or trained for a massive air support operation, the Air Force had fallen back on World War Two experiences and assisted in the stopping of the communist aggression on the peninsula. Despite the political constraints, airpower had significantly contributed to the outcome of the war.

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<sup>42</sup> Futrell, *Influence*, 262.

<sup>43</sup> Geoffrey Perret, *Eisenhower* (New York: Random House Publishing, 1999), 427.

<sup>44</sup> Futrell, *Korea*, 689-692.

Air superiority was confirmed to be absolutely necessary. By itself, air superiority was not sufficient for success, but military success could not be achieved without it. Unfortunately, the Air Force walked away from Korea with the notion that a multi-role fighter was an adequate platform for air superiority, if employed in sufficient numbers. The F-86, even though not designed as an air superiority fighter, proved highly effective against Soviet air threats.

On the air-to-ground side, strategic bombardment, interdiction, and close air support produced mixed lessons. The effect of political restrictions on a bombing campaign left the Air Force with an impression that the truly lucrative targets were not attacked and as such, no real lessons could be learned. Many USAF leaders believed Korea was an aberration and America would not and should not face a similar situation again.<sup>45</sup> Despite this general feeling, the close air support mission was one mission that the Air Force should have retained its lessons learned no matter where the next war would be. Anytime ground forces were employed against an enemy, tactical airpower would be required to support the Army. In Korea, CAS proved highly effective and essential to ground commanders, although the Army felt the Air Force failed to support ground forces to an adequate level. Following the war, CAS exercises confirmed the problems noted in Korea—lack of adequate numbers, timeliness of strikes, and poor communications. The Army desired Air Force pilots as forward air controllers to correct these problems, but the Air Force did not wish to lose their experienced fighter pilots to a ground mission. Unfortunately, the Air Force refused to let go of its pilots and even went so far as to

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<sup>45</sup> Tilford, 21.

cancel the Mosquito system of air direction used in Korea in order to focus on strategic missions.<sup>46</sup>

From an interdiction standpoint, Korea revealed several lessons. First, both night and adverse weather proved to be significant hurdles that SHORAN could only partially overcome. SHORAN was able to get the FEAF in the general area of the target, but inaccuracies in the system prevented the precision found in visual attacks. Second, the progress of technology to suppress ground radars still could not prevent optically fired surface-to-air guns from hitting FEAF aircraft. Moreover, tactics used in Korea by US fighters forced them down into the heart of the antiaircraft artillery (AAA) engagement envelope. Even though some precision-guided bombs were used in Korea to deliver ordnance from outside the AAA threat envelope, their precision was far from accurate and consequently reduced the willingness of the Air Force to continue using them. Third, although highly maneuverable and survivable fighters were essential to surface attack missions, experienced pilots made the difference between poor and outstanding results. Near the end of the war, maintaining an adequate number of experienced pilots in theater proved difficult. The reason was due to the policy of rotating pilots back to the States and not instituting a robust pilot training program to replace the experienced pilots leaving Korea.

Overall, the Air Force left Korea with the impression that, given the restrictions imposed, it had accomplished its mission. For some USAF leaders, those restrictions prevented the proper application of airpower.<sup>47</sup> Furthermore, these leaders lamented that the United States should not get involved in limited conflicts again if similar restrictions

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<sup>46</sup> Millett, 399.

<sup>47</sup> Futrell, *Ideas*, 349; Tilford, 19.

were imposed. Other USAF leaders were nonetheless satisfied that airpower accomplished what it had in Korea. The Air Force was undoubtedly vital to the successes achieved by the United Nations Command. Tactical airpower in the form of F-86s for air superiority and F-80s, F-84s, and T-6s for close air support made significant air contributions to the war effort. The results of the interdiction campaign however, would remain the most contested of the Korean War. Even so, Senior USAF leaders were content with the notion that the FEAF had held the Chinese to the 38<sup>th</sup> parallel. Content, the Air Force did not feel compelled to change anything. Historians have pointed out though, that the Air Force had failed to achieve its primary goal of evicting the communists from the peninsula or its subordinate goal of preventing the capability for a Chinese offensive at the 38<sup>th</sup> parallel. What the USAF leaders failed to realize was that the armistice was less a result of the airpower, but likely more the result of the other strategic events (Eisenhower's threat of nuclear attack and Stalin's death). In all probability, the fact that the Chinese agreed to the armistice is due to the fact that it had achieved its political objectives—preservation of North Korea.<sup>48</sup>

### **The Strategic Contextual Factors – Post Korean War**

Following the Korean War, President Dwight D. Eisenhower stated that the United States would never again be tied down in a war as it was in Korea.<sup>49</sup> Eisenhower believed that if the military were to be employed again, it would do so without the restrictions imposed during the Korean War. The President believed that nuclear weapons were the weapons of choice for any future war. In December 1953, Eisenhower

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<sup>48</sup> Mark, 317; Millett, 394.

<sup>49</sup> John J. Sbrega, "Southeast Asia" in Benjamin Franklin Cooling, ed. *Case Studies in the Development of Close Air Support* (Washington D.C.: United States Government Printing Office, 1990), 411.

told the NSC, “Our only chance of victory, would be to paralyze the enemy at the outset of the war...If war comes, the other fellow must have started it. Otherwise we would not be in a position to use nuclear weapons, and we have got to be in a position to use that weapon...”<sup>50</sup> The Korean War had concerned Eisenhower and forced him to take a “new look” at the US military strategy and requirements. The President’s New Look forced the military to re-evaluate its missions and force posture.

At the termination of hostilities, the United States Air Force possessed 106 active wings, but only 93 were considered operational.<sup>51</sup> While the JCS studied the world situation, the Air Force was given an interim level of 120 wings to replace the 143-wing objective. As the Air Force studied the Korean War and contemplated where the next conflict would be, many Air Force leaders believed that a future war would not have the luxuries experienced in Korea. The luxuries included a high level of air superiority, strategic bombers conducting interdiction missions, and the freedom of the seas. As mentioned above, the official Air Force policy was to consider the Korean War an anomaly. The USAF Secretary went as far as to write in 1955, “The Korean War was a special case, and airpower can learn little from there about the future role in United States foreign policy.”<sup>52</sup> Again the US military establishment focused largely on a single Soviet threat and nuclear weapons to contain that threat.

As the US military prepared for the post-Korean War world, the Eisenhower administration was already looking to French Indochina and the limited conflict that was occurring there. Little did the administration know that this limited conflict in Vietnam would plague the United States a decade later. In fact, the limited conflicts or “brushfire

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<sup>50</sup> Perret, 450.

<sup>51</sup> Futrell, *Korea*, 708.

wars” as they were called, that were occurring in French Indochina and Malaysia in the early 1950s were signs of things to come. The 1950s would also witness limited confrontations in Lebanon, Formosa, and Berlin. With perfect hindsight, we know that Korea was less of an aberration than the US leadership of the post-Korean War era believed. Tactical airpower achieved mediocre success in Korea but would be underemphasized in the decade that followed. Just how underemphasized and to what extent is the focus of remainder of this study.

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<sup>52</sup> Tilford, 21.

## Chapter 3

### **Model I Analysis: US Tactical Airpower from “New Look” to “Flexible Response”**

When President Dwight D. Eisenhower took office in the 1953, few in the Air Force would have thought that the new president, a former General of the Army, would have changed the national security policy, which at the time provided for the expansion of military capabilities. Running under a campaign platform of a balanced federal budget and “no more Koreas,” however, Eisenhower put a halt to the growing Department of Defense (DoD) spending.<sup>53</sup> Tactical airpower would be severely cutback (although not forgotten) over the next five to eight years. Several factors contributed to this cut back. Using Graham T. Allison’s “Model I” framework, I will explain the systemic reasons for tactical airpower’s development (or lack thereof) during the 1950s. This chapter begins with an explanation of Allison’s first model. It is followed by a detailed examination of the national security policy, national military strategy, and decision-making process in the development and procurement of tactical airpower during the 1950s using that concept.

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<sup>53</sup> John A. English, *Marching Through Chaos: The Descent of Armies in Theory and Practice* (Westport, CT: Praeger Publishing, 1996), 130.



## Model I Decision-Making

What determined the force structure of the Soviet Union or the United States? Many historians have answered this question by linking objectives to doctrine. If a state has an objective, then a particular doctrine will lead to a quantifiable force structure necessary to achieve that objective. If the Soviet Union desired to conquer the world or Europe, then given its established military doctrine, a large and specific type of military force would be necessary to defeat its foes and occupy the land sought. Oftentimes it appears logical to proceed in this fashion in an effort to explain why a country possesses the forces it does. To answer this question and others, many historians have stated that a country makes its decisions as if it were a unitary (that is a single entity with one voice), rational actor. According to Allison, the rational actor (the state in this example) is faced with alternatives or courses of action and tends to choose the alternative that *maximizes* value within specified constraints. “In economics, to choose rationally is to select the most efficient alternative, that is, the alternative that maximizes the output for a given input or minimizes input for a given output.”<sup>54</sup> In the Soviet example, the force posture selected would be based on a value-maximizing decision-making process to achieve its strategic objectives, which would fall within Soviet doctrine.

According to Allison, the concepts of the rational actor model include: “Goals and Objectives,” “Alternatives,” “Consequences,” and “Choice.”<sup>55</sup> When facing a decision or problem, the rational actor will place some “value” or “utility” on the outcome of the goals and objectives it desires. Through the decision-making process, the actor will

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<sup>54</sup> Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (New York: Harper Collins Publishing, 1981), 28-9.

<sup>55</sup> Allison, 29-30.

accumulate alternative courses of actions and rank them according to their value or consequence. Rational choice consists of simply choosing the best alternative. If a nation decides upon a particular course of action, then it must have had some desired end toward which the decision constituted a maximizing means. If the Soviet Union's objective was to conquer Western Europe, then in keeping with Soviet doctrine, the USSR might wish to position a massive ground force in Eastern Europe. If the Soviets were concerned about United States intervention, then some additional force structure may be required (strategic nuclear weapons) in order to deter the Americans from interfering with Soviet objectives. From a Model I perspective, only the most efficient alternative (from the Soviet's point of view) would be chosen to meet its objectives. Other alternatives that did not *appear* to be as efficient would be discarded.

For the remaining portion of this chapter, I will apply Allison's Model I approach to analyzing America's decision-making process to establish why the US force structure, as it pertained to tactical airpower, was postured the way it was at the commencement of the Vietnam War (1961). A Model I analysis assumes that the United States was a unitary rational actor that possessed a specific national security policy, which drove its national military strategy selection. The national military strategy, in turn, dictated a variety of alternative courses of action, which led to a value-maximizing choice. From this military strategy choice, a Model I analysis may explain why tactical airpower evolved as it did.

### **US National Security Policy During the 1950s**

In September 1950, the North Atlantic Treaty Organization (NATO) Military Committee requested a conventional force buildup to counter the extensive Soviet conventional forces positioned in Eastern Europe (175 divisions). The desired NATO

goal was 96 divisions and over 4,000 aircraft, with United States Air Forces Europe (USAFE), at the time possessing 2,100 aircraft and 16 wings, expanding to 28 wings.<sup>56</sup> However, when Josef Stalin died in 1953, several European countries backed away from the ambitious goal and focused their attentions on internal economic affairs.

As previously noted, President Eisenhower likewise favored a smaller military to alleviate some of the US economic burdens arising from the Korean War. In the President's first State of the Union address to the Congress in 1953, Eisenhower stated that his foreign policy recognized that no single country alone, even the United States, could defend the world against communist aggression. He went on to intimate that the United States and its allies should rely on "mutual security" and "mutual cooperation" to overcome the financial burden of this tremendous task.<sup>57</sup> By relying on America's allies, Eisenhower posited that fewer US forces would be needed overseas, thus reducing the strain on the military force structure. By spending less on the military, Eisenhower could spend more on US domestic programs. The president also understood that there must be a balance between a strong military and economic growth. He went on to state:

Our labor for peace in Korea and in the world imperatively demands the maintenance by the United States of a strong fighting service ready for any contingency. Our problem is to achieve adequate military strength within the limits of endurable strain upon our economy. To amass military power without regard to our economic capacity would be to defend ourselves against one kind of disaster by inviting another.<sup>58</sup>

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<sup>56</sup> Dr. Richard P. Hallion, SES, "The USAF and NATO: From the Berlin Airlift to the Balkans" an address to the DFI International Army and Navy Club (Washington D.C., 15 April 1999), n.p., found on line at <http://www.airforcehistory.hq.af.mil/Hallionpapers?usafandnato.htm>; and English, 130.

<sup>57</sup> "Annual Message to the Congress on the State of the Union, February 2, 1953," in *Public Papers of the President of the United States: Dwight D. Eisenhower, 1960 – 1961* (Washington D.C.: Office of the Federal Registrar, National Archives and Records Service, 1954), 14.

<sup>58</sup> *Ibid.*, 17.

On 30 April 1953, Eisenhower presented to Congress his plan concerning the reorganization of the Department of Defense. In this address he stated that the United States was not a “military-minded” nation and the past had witnessed times when the United States was not properly prepared for the outbreak of war (both World Wars and Korea).<sup>59</sup> He went on to say:

We in the United States have, therefore, recently embarked upon the definition of a *new, positive foreign policy*. One of our basic aims is to gain again for the free world the initiative in shaping the international conditions under which freedom can thrive. Essential to this endeavor is the assurance of an alert, efficient, ever-prepared defense establishment...These simple facts make imperative the maintenance of a defense commanding the *most modern technological instruments in our arsenal of weapons*.<sup>60</sup> (emphasis added)

The “most modern technological instruments” referred to were nuclear weapons. Unlike Truman, who tended to view nuclear weapons as a last resort, Eisenhower considered them an integral part of the military arsenal. Eisenhower’s decision to rely on nuclear weapons in order to justify cutbacks in expensive conventional military capabilities was the foundation of his international policy, which came to be known as the “New Look.”

After six months of examining the US political and military strategies, Eisenhower’s top aides produced a basic planning document for the New Look that was titled National Security Council (NSC) 162/2, which the president approved on 30 October 1953. “NSC 162/2 began by defining a twofold central national security problem: (a) to meet the Soviet threat to U.S. security; and (b) in doing so, avoid seriously weakening the U.S.

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<sup>59</sup> “Special Message to the Congress Transmitting Reorganization Plan 6 of 1953 Concerning the Department of Defense, April 30, 1953,” in *Public Papers of the President of the United States: Dwight D. Eisenhower, 1960 – 1961* (Washington D.C.: Office of the Federal Registrar, National Archives and Records Service, 1954), 226.

<sup>60</sup> *Ibid.*, 226-7.

economy or undermining its fundamental values and institutions.”<sup>61</sup> NSC 162/2 focused on the Soviet Union as the primary threat, although potentially “other communist” countries (e.g., China) also were regarded as posing a future threat. NSC 162/2 capitalized on Eisenhower’s desire to rely on nuclear weapons as a means of deterring the communist threat. It stated, “in the event of hostilities the United States will consider nuclear weapons to be as available for use as other weapons.”<sup>62</sup>

Given the Soviets’ immense conventional armed forces and the United States’ desire to balance its federal budget, nuclear weapons were to be the primary means of deterring communism. Furthermore, by relying on US allies to provide some measure of their own defense, the US could continue to divert its precious dollars on domestic issues and not on a larger military infrastructure. Procuring nuclear weapons and their delivery platforms (strategic bombers) would be significantly less expensive than the large conventional force NATO had requested in 1950. NSC 162/2 accurately predicted that both super powers would engage in a nuclear arms race, but its authors stressed the necessity of the United States to maintain its lead in order to deter the Soviets from general war. If general war did break out, then the United States would win that war through a “massive retaliation”. Furthermore, it was postulated that if massive retaliation could deter nuclear war, then nuclear weapons would also deter forms of war less than total nuclear war.<sup>63</sup>

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<sup>61</sup> David N. Schwartz, *NATO’s Nuclear Dilemma* (Washington D.C.: The Brookings Institution, 1983), 23.

<sup>62</sup> As quoted by Hallion in “The USAF and NATO: From the Berlin Airlift to the Balkans.”

<sup>63</sup> Earl H. Tilford, Jr., *Setup: What the Air Force Did in Vietnam and Why* (Maxwell AFB, Ala: Air University Press, 1991), 28; Mark Clodfelter, *The Limits of Airpower: the American Bombing of North Vietnam* (New York: The Free Press, 1989), 30-1; Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force 1907 – 1960, Vol. 1* (Maxwell AFB, Ala: Air University Press, 1989), 443-6 (hereafter cited as Futrell, *Ideas*).

## **US Military Strategy**

On 12 January 1954, US Secretary of State John Foster Dulles presented “Massive Retaliation” to the public as the new military strategy for the United States. Immediately, Massive Retaliation became synonymous with New Look. In his speech Dulles indicated that, based on the New Look, the United States would thereafter adhere to the concept of instant, massive, nuclear retaliation, which would be applied to the existing strategy of deterrence. Massive Retaliation would give the United States the initiative in any future conflict by allowing America to choose the means, the time, and the place of retaliation.<sup>64</sup>

As was the case in World War Two, the United States’ focus internationally remained a “Europe first” strategy. US leaders believed that, short of a direct attack on the continental United States, an invasion of Europe was the worst threat to American security. Holding the permanent position of Supreme Allied Commander Europe (SACEUR), America would always be extremely influential in NATO affairs. It is no surprise, then, that NATO followed shortly thereafter in America’s footsteps. On 17 December 1954, the NATO Military Committee (MC) formulated its equivalent to NSC 162/2—MC 48. MC 48 encapsulated NATO’s nuclear doctrine. MC 48 stated that NATO would use nuclear weapons at the commencement of hostilities with the Soviet Union whether or not the USSR used them first.<sup>65</sup> If and when future minor border skirmishes with the Soviet Union escalated, then NATO was to retaliate with the full weight of its nuclear arsenal. There was no concept of “limited war” with the Soviet

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<sup>64</sup> Caroline Frieda Ziemke, “In the Shadow of the Giant: USAF Tactical Air Command in the Era of Strategic Bombing, 1945 – 1955,” (an unpublished doctoral dissertation presented to the Ohio State University, 1989), 245.

<sup>65</sup> Paraphrased from Hallion in “The USAF and NATO: From the Berlin Airlift to the Balkans.”

Union. NATO's conventional force, therefore, was a "trip-wire" to compel the start of a general nuclear war should the Soviets launch an offensive in Europe.

### **"DROPSHOT"**

Plan "DROPSHOT" was the United States' secret war plan against the Soviet Union. The plan had its genesis in the Truman Administration in 1949, but evolved over the years. Designed by the Joint Chiefs of Staff (JCS), DROPSHOT's basis was that nuclear war would break out in January 1957 (the date was for planning purposes only). America's first course of action would be to deter Soviet aggression.<sup>66</sup> According to the plan, it was vital that the Soviets understand that any attack against the US or its allies would require an immediate nuclear response through determined action and maximum available assistance to the country attacked. Moreover, the Soviets should expect the risk of general nuclear war if the slightest infringement upon friendly nations occurred. If war did occur, then in cooperation with its allies, a solidly postured US military would defeat the "Communist-dominated armed rebellions."<sup>67</sup> The plan did not specify if "rebellions" included USSR support for wars of liberation, but the wording of the plan suggests that the authors intended to contain Soviet aggression at all levels of conflict with nuclear weapons.

Initial actions of DROPSHOT called for the defense of the Western Hemisphere and European Allies. If war broke out, then the United States and its allies were to destroy the Soviet Union's will and capacity to resist by launching a powerful nuclear air

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<sup>66</sup> Anthony Cave Brown, *DROPSHOT: The United States Plan for War with the Soviet Union in 1957* (New York: The Dial Press, 1978) 14.

<sup>67</sup> *Ibid.*, 14.

offensive in Western Eurasia.<sup>68</sup> Following the initial air offensive, friendly forces were to launch a discriminate containment plan totally encircling the Soviet Union, secure strategic areas and bases, secure sea lines of communications, and wage political, economic, psychological, and underground or guerilla warfare. Lastly, the plan called for launching “coordinated offensive operations of all arms against the USSR as required.”<sup>69</sup>

A preventive nuclear attack was preferred, but regardless of which country attacked first, the nuclear air offensive was designed to simultaneously strike varying parts of the Soviets’ war-making capability. The target selection was very similar in philosophy to that of World War Two air planners with the exception of the addition of targeting the enemy’s nuclear capability. According the DROPSHOT’s planners, the most important targets that strategic airpower should strike were:

- (a) Stockpiles of weapons of mass destruction, and facilities for their production; (b) Key government and control facilities; (c) Urban industrial areas (d) Petroleum industry; (e) Aerial mining against submarine; (f) Submarine bases; (g) Transportation system; (h) Aircraft industry; (I) Coke, iron, and steel industry; and (j) the electric power system.<sup>70</sup>

### **Tactical Airpower’s Role**

Given the tremendous emphasis on nuclear weapons in national security and military strategy, conventional tactical airpower had only a minor part in the war as the DROPSHOT planners envisioned it. The planners understood that tactical airpower would be instrumental in the air superiority mission both in the defense of the United States and in Western Europe. It was critical to the success of DROPSHOT that Soviet strategic airpower not penetrate US and NATO air defense. Within Europe, there was a limited role for ground attack missions in the event that Soviet conventional forces

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<sup>68</sup> Ibid., 21.

<sup>69</sup> Ibid.



invaded from Eastern Europe. The planners did not foresee much point in planning for such occurrences since the initial air offensive was to be nuclear. There would have been little that remained for tactical airpower to attack after a nuclear strike.

Despite the lessons learned from World War Two and Korea, escort of long-range bombers was discounted as a mission for fighters.<sup>71</sup> Bombing missions were intended to be a one-time mission (sometimes a one-way trip) that relied on electronic means to distract Soviet air defenses. Besides, to be effective as a war strategy, nuclear bombardment did not need the 100 percent success of its bombers. During war gaming, DROPSHOT planners concluded that approximately 70 percent of the bombers would get through Soviet defenses.<sup>72</sup> This figure was an acceptable figure to guarantee success of DROPSHOT. More importantly, fighter escort could not travel the distance that the bombers had to cover and therefore were not capable of escorting the bombers.

Despite the lack of emphasis on conventional airpower, tactical airpower did flourish under the developing mission of delivering tactical nuclear munitions. Developed shortly after World War Two and perfected in the early 1950s, tactical nuclear munitions were designed to be smaller and to produce less destructive yield than the nuclear bombs employed by strategic airpower. The result was the development of tactical nuclear artillery, rockets, and missiles for battlefield use.<sup>73</sup> US tactical airpower could now contribute to the New Look strategy through the employment of tactical nuclear munitions in Europe.

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<sup>70</sup> Ibid., 23.

<sup>71</sup> Most of the escort fighters were a part of the strategic air forces (8AF and 15AF). Some were loaned from the tactical air forces (9AF).

<sup>72</sup> Brown, 25.

<sup>73</sup> Schwartz, 31.

As a result of the New Look strategy and the development of tactical nuclear weapons, tactical nuclear airpower grew while tactical conventional airpower remained virtually unchanged following the Korean War. During the 1950s, the Air Force developed several fighters that contributed to America's military strategy. Developed during the Korean War (and prior to the period of study of this thesis) the F-94 and F-100, along with the F-86, were the only multi-role fighter-bombers that were designed for the conventional role throughout the 1950s (and early 1960s for the F-100).<sup>74</sup> The remaining fighters were developed during the 1950s for the nuclear or nuclear-related mission(s). To deliver tactical nuclear munitions, fighter-bombers such as the F-101C, F-104C and G, and the F-105 were developed. Although capable of delivering non-nuclear ordnance, these fighter-bombers were not designed to be employed in the conventional combat environment that was experienced in Korea. Rather, these fighter-bombers were envisioned to augment the war plan's use of strategic bombers and to deliver a tactical nuclear payload and return at the highest possible speed. After acquiring the tactical nuclear mission, the Air Force's Tactical Air Command (TAC) came to be known as a "junior Strategic Air Command."<sup>75</sup> To defend the United States against Soviet strategic bombers, aircraft such as the F-102, F-104A, and F-106 were created. Given that their only mission was to engage non-maneuvering Soviet bombers, these interceptors were not required to be highly agile. To accomplish the reconnaissance mission, the F-100 and F-101 were modified from their original design with intelligence gathering equipment.<sup>76</sup>

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<sup>74</sup> Fighter-bombers were aircraft primarily developed for the air-to-ground mission, but had a limited air-to-air capability.

<sup>75</sup> Tilford, 33.

<sup>76</sup> For a detail description of the fighter aircraft of the 1950s, see Marcelle S. Knaack, *The United States Air Force Reference Series: Post-World War Two Fighters, 1945 – 1973* (Washington D.C.: United States Government Printing Office, 1986).

Of the two remaining tactical fighters that were employed in Vietnam, the F-4 (a navy-developed fighter) and the F-111, both were either modified or developed for USAF use after 1961.<sup>77</sup>

The Air Force posited that its tactical airpower, delivering tactical nuclear munitions, was instrumental in the achievement of national political objectives in Europe. The Air Force's theater doctrine of employing tactical airpower found great favor within Eisenhower's approach to using the military as efficiently as possible in order to keep military spending to a minimum. Furthermore, the President and his military planners believed that tactical nuclear airpower "represented both a psychological and physical contribution to the deterrence of Soviet aggression in Western Europe."<sup>78</sup> This added mission would give the Air Force a larger share of the defense budget.

### **Sputnik and the Rise of ICBMs**

On 4 October 1957, the Soviet Union launched Sputnik I, the first man-made satellite in history. Chairman of the JCS, Air Force General Nathan F. Twining, stated the launching of Sputnik I was "a shot fired which was both seen and heard around the world."<sup>79</sup> Less than a month later, on 4 November 1957, the Soviets successfully launched Sputnik II, a 1,120-pound rocket that safely delivered a dog into orbit and back

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<sup>77</sup> The Navy's F-4 was designed in the mid- to late 1950s for carrier defense and interception of Soviet bomber. The Air Force purchased the F-4C in 1963 to be used as a multi-role fighter-bomber. The F-4C was first deployed to Vietnam in 1965. The F-111 was designed as an air-to-ground platform in 1962, capable of employing both conventional and nuclear ordnance. It was later modified to carry targeting pods, which permitted the delivery of precision-guided munitions. The F-111 was designed for the same missions as the F-105 and proved highly effective in Southeast Asia in 1972 and later during Desert Storm. Knaack, *Post-World War Two Fighters*, 215.

<sup>78</sup> Jerome Vernon Martin, "Reforging the Sword: United States Air Force Tactical Air Forces, Air Power Doctrine, and National Security Policy, 1945 – 1956" (an unpublished doctoral dissertation presented to the Ohio State University in 1988), 227 – 8.

<sup>79</sup> House, *Department of Defense Appropriations for 1959: Hearings before the Subcommittee of the Committee on Appropriations, Overall Policy Statements* (85<sup>th</sup> Congress, 2d session, 1958), 25.

to Earth. The Soviets' success with missile technology "created dismay everywhere outside the Iron Curtain."<sup>80</sup>

The launching of Sputnik proved to the United States that the Soviets were further ahead in missile technology. Missile technology meant that the Soviets' soon might have the capability to deliver a nuclear payload to America or Western Europe through space, which the United States could not duplicate nor block. In response, Eisenhower and Congress increased funding to DoD and its intercontinental ballistic missile (ICBM) programs, which fell under both the Air Force and the Army. Missiles such as Atlas, Thor, Jupiter, and Titan evolved during this period. The net result in the Air Force was a greater emphasis on the strategic nuclear missions and a diminished concern for conventional tactical airpower. Throughout most of the 1950s and early 1960s, the Air Force possessed the largest percentage of the DoD budget compared to the other services (see Table 1). Regrettably for tactical airpower during this same period, its share of the Air Force budget dropped to its lowest level since 1948 (See Table 2). The result of this reduced spending for tactical airpower research and development and procurement meant that on a systemic level, tactical airpower could not advance compared to strategic airpower. Not until the early 1960s did the Air Force begin to increase funding to tactical airpower, primarily as a result of the growing following of the doctrine of "flexible response."

### **Objections to Massive Retaliation**

In 1953, the United States possessed approximately 1,000 nuclear weapons; by 1960 America had built over 18,000. The megatonnage advances over this time frame

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<sup>80</sup> Futrell, *Ideas*, 477.

increased more than twenty-fold.<sup>81</sup> US intelligence reports were estimating that the Soviets' nuclear arsenal was quickly reaching parity with the United States. During the 1950s, as a result of the massive retaliation policy, a plethora of notable figures wrote on the nuclear subjects of deterrence theory, credible second-strike capability, and mutual assured destruction (MAD). The critics' main objection to massive retaliation was its perceived lack of credibility. In 1954, Bernard Brodie questioned the logic of the America's national security policy and expressed doubts as to whether or not the United States would indeed launch a massive nuclear attack over minor conflicts.<sup>82</sup> Similarly, Henry Kissinger also warned of the incompatibility of the New Look and limited war. Moreover, the likelihood of limited conflicts occurring around the world was expected to increase. Even NSC 162/2 and DROPSHOT acknowledged that limited war was the most likely future war possibility with the Soviet Union. In the United Kingdom, British Air Marshal Sir John Slessor of the Royal Air Force stated, "We can take it as a foregone conclusion that our opponents, having decided that it will be too costly to overwhelm us by direct assault, will take every opportunity to turn or undermine our defenses by other means."<sup>83</sup>

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<sup>81</sup> English, 131.

<sup>82</sup> English, 132.

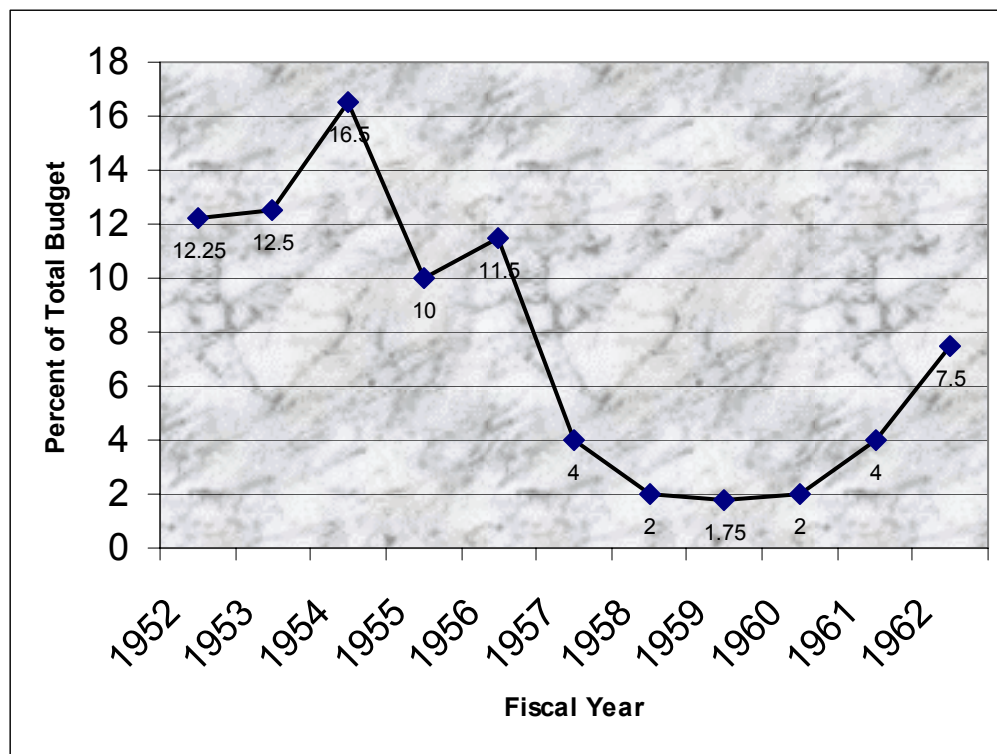
<sup>83</sup> Sir John Slessor, "Has the H-Bomb Abolished Total War?", *Air Force Magazine* (January 1958), 50 – 1.

**Table 1. Department of Defense Budgetary Summaries: 1953 – 1961**

Fiscal Year	Army	Navy	Air Force	Defense Agencies	Total DoD	USAF Percent of Total DoD
1953	16,337	11,878	<b>15,087</b>	409	43,711	<b>34.5%</b>
1954	12,910	11,293	<b>15,668</b>	464	40,336	<b>38.8%</b>
1955	8,899	9,733	<b>16,407</b>	494	35,532	<b>46.1%</b>
1956	8,702	9,744	<b>16,749</b>	596	35,791	<b>46.7%</b>
1957	9,063	10,398	<b>18,363</b>	615	38,439	<b>47.7%</b>
1958	9,051	10,906	<b>18,435</b>	669	39,062	<b>47.1%</b>
1959	9,468	11,728	<b>19,084</b>	953	41,233	<b>46.2%</b>
1960	9,392	11,642	<b>19,066</b>	1,115	41,215	<b>46.2%</b>
1961	10,131	12,215	<b>19,778</b>	1,105	43,228	<b>45.7%</b>

Figures are in Millions of Dollars. Source: “Expenditures, Summary by Service” *Department of Defense Fact Book, 1947 – 1978* (Washington D.C.: United States Government Printing Office, 1978), 27).

**Table 2. Tactical Aircraft Production as a Percentage of Total Air Force Budget**



Source: “A Study of Aviation Responsibilities: Air Force – Army, June 1962” United States Air Force Study located at United States Air Force Historical Agency, call number K143.043-5.

Doubts continued to arise around the globe over the possibility of the superpowers’ intent to wage total nuclear war over less than vital national interests. Would one nation risk nuclear suicide over the invasion of one of its allies? In France, political leaders questioned whether the United States would “trade Lyons for New York” if the Soviets were to strike France with nuclear weapons. French General Pierre Gallois, and later French Presidents Guy Mollet and Charles de Gaulle, lamented the unlikely chance that America would provide for the defense of NATO or France if forced to retaliate with nuclear weapons.<sup>84</sup> The outcome of these discussions on massive retaliation was a lack

<sup>84</sup> Schwartz, 36 – 41.

of confidence in the United States' deterrence policy. America was betting that nuclear deterrence would discourage an enemy from taking military action (nuclear or conventional) by presenting the prospect of risks and costs of nuclear war that outweighed any gains of any territory conquered. If, however, a limited, conventional confrontation was perceived by the Soviets as not likely to evoke a nuclear response from the United States, then massive retaliation would fail as a viable military deterrent strategy for the entire spectrum of conflict. The United States attempted to counter the loss of confidence by placing intermediate range ballistic missiles (IRBM) in Europe to deter the chance of a communist invasion.<sup>85</sup>

As early as 1955, senior US and NATO military leaders were arguing for a greater number of conventional military forces to re-establish NATO's credibility of deterring non-nuclear aggression. In 1956, United States Army Chief of Staff General Maxwell Taylor presented an alternative strategy that provided for a flexible response based on varying degrees of confrontations along the spectrum of conflict. His notion of flexible response relied more on conventional forces to deter general war and local aggression, defeat local aggression, and win a "general war conducive to viable peace."<sup>86</sup> Although primarily concerned with US Army forces, General Taylor asserted that his concept applied to the entire Defense Department. His "National Military Program, the title of a Strategy of Flexible Response" was envisioned to:

be flexible enough for ready adaptation to presently unforeseen and unforeseeable situations. It would avoid dependence upon a single weapons system and upon a single strategic concept—the capital fault of the strategy of Massive Retaliation...Massive Retaliation offers only unlimited destruction with nothing beyond.<sup>87</sup>

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<sup>85</sup> Ibid., 62 – 81.

<sup>86</sup> Maxwell D. Taylor, *The Uncertain Trumpet* (New York: Harper and Brothers Publishing, 1959), 31.

<sup>87</sup> Taylor, 36.



In the time of “nuclear plenty,” General Taylor’s strategy was not accepted and the New Look continued to be the United States’ national security policy for the remainder of President Eisenhower’s two terms in office (1953 – 1961). Not until President John F. Kennedy’s Administration in 1961 did the strategy of Flexible Response supplement the strategy of Massive Retaliation.<sup>88</sup> One reason for continued reliance on Massive Retaliation was a perception of US leaders that the threat of nuclear response had a beneficial effect on limited confrontations that occurred in the mid-1950s. American involvement in the crises of the Suez Canal, Lebanon, and the Straits of Formosa all concluded with no major war with the Soviet Union and an outcome favorable for the United States. Had conflict erupted in those hot spots, it is a matter of speculation whether or not USAF tactical airpower would have been adequate or appropriate to contend with the adversaries involved.

### **Was Tactical Airpower Impeded? – A Model I Answer**

To answer the question whether or not tactical airpower was impeded at a systemic level and why, Allison’s Model I construct will serve as a guide to comprehending the United States’ decision-making process. To recap, as a result of the decision-making process during the 1950s, the United States accumulated alternative courses of actions and ranked them according to their value or consequence. America’s rational choice consisted of simply choosing the best-perceived alternative and that choice was nuclear deterrence.

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<sup>88</sup> Tilford, 48; English, 135.

The United States' decision-making process began with defining its goals and objectives. From NSC 162/2 and DROPSHOT, America's primary goal was to deter Soviet aggression (general or limited in nature) and if deterrence failed, defeat the communist nation(s). In the bi-polar world of the 1950s, the only foreseeable threat was the communist threat against democracy. From this vantage point, three alternative courses of action were presented. First, the United States (preferably with its allies) could adopt a strategy of Massive Retaliation with nuclear munitions (strategic and tactical) to deter both general and limited war. If deterrence failed, then the communist aggressors would feel the full wrath of nuclear devastation. Second, the United States and NATO could build a substantial conventional military force to augment a minimal nuclear force in order to counter Soviet belligerence across the entire spectrum of conflict. Third, The United States and NATO could develop a balanced force structure of credible nuclear and conventional capabilities to counter Soviet aggression across the entire spectrum of conflict.

Each alternative had consequences, which influenced America's decision to make a value-maximizing choice. The first alternative provided the United States with the greatest force possible (nuclear weapons) as a deterrent to Soviet hostilities and with the least financial burden to the US economy. By relying on nuclear weapons, the expensive conventional force structure could be avoided in favor of balancing the federal budget. If the senior US decision-makers believed (and Eisenhower had publicly so stated) that the United States would employ nuclear weapons even in a limited war scenario, then nuclear munitions may have deterred conflict. Too, for that last time for many years, the Federal budget was balanced.

The second alternative provided US decision-makers with the option of a more credible conventional force to counter the 175 Soviet divisions poised along the East European border. This alternative resembled what NATO leaders were requesting in 1950 prior to Stalin's death. The absolute minimal nuclear force structure would be required to offer some level of nuclear deterrence against the growing Soviet nuclear threat. Although providing for some nuclear deterrence, the second alternative may not have presented a sufficient number of nuclear weapons to provide a second strike capability should the Soviets launch a pre-emptive first-strike against US nuclear capabilities. This option required a larger financial burden for the conventional buildup than the first alternative, but less of a nuclear burden. The enormous conventional force could also have been positioned at bases around the world to contend with the varying hot spots that flared up. For the United States, which was recovering from the Korean War, it is unlikely that the American public would have favored the position of stationing its sons and daughters away from home. After fighting two major wars in close succession, the American public was war weary and wished to have its relatives home and not stationed abroad.

The third alternative was a compromise between alternatives one and two. This alternative, which General Taylor proposed, presented more of a balanced force structure to credibly contend with the entire spectrum of conflict. This option included enough nuclear weapons to provide for a limited second-strike capability while building up conventional capabilities to provide some level of credible conventional deterrence as well. As a compromise, the third alternative would have been less expensive than the second, but more expensive than the first. The third alternative offered the widest

credibility of deterrence and war-fighting capability at a medium price. This alternative relied upon credible force structures at both the nuclear and conventional levels to deter war and, if war erupted, to win quickly (whatever the level).

Without actually knowing how decision-makers ranked these alternatives, history has shown that the “value-maximizing” alternative chosen by US decision-makers was the first alternative. President Eisenhower was adamant about devoting US dollars to domestic concerns and relying on nuclear weapons was a financially responsible method for deterring Soviet aggression. Although Eisenhower voiced his inclination to use nuclear weapons in any conflict if provoked, there remains a great debate today regarding the likelihood that American and NATO leaders would have ever employed nuclear munitions in a limited war scenario in the decade prior to Vietnam. Now that the Cold War is over, it is impossible to prove that nuclear weapons deterred a nuclear war (it is difficult to prove a negative). Nuclear weapons likely contributed in some fashion to deterring nuclear war, but they did not prevent the escalation of hostilities that took place in Southeast Asia in the 1960s.

For USAF tactical airpower development during the Eisenhower Administration, a Model I approach would seem to indicate that conventional airpower had only a minor role in US national political and military strategy. Of the USAF tactical aircraft developed during this time period, all were conceived primarily for the tactical nuclear or nuclear-related missions. As a result, a Model I analysis indicates that at a systemic level, the United States Air Force neglected conventional tactical airpower. Although capable of delivering conventional weapons, these aircraft were not designed to be employed in a conventional war. Furthermore, given the focus of national security

strategy at that time, munitions procurement was similarly steered toward tactical nuclear weapons. This disregard for conventional, tactical air missions (along with poor political guidance) contributed to the Air Force's poor performance during the initial stages of the Vietnam War. Writing about the impact of Massive Retaliation, John English called the result of the United States' strategy a "dangerous military legacy."<sup>89</sup> This author's Model I view notes that America's reliance on nuclear weapons proved to be a detriment to conventional forces.

Essentially a cheap, quick, technological solution to a military problem, nuclear deterrence has itself become so encumbered with theoretical twists and esoteric spins that attempts to apply them in their various forms might actually do more harm than good. In stead of reflecting the essential unity of war fighting, deterrent theory focused military attention on the grand strategic plane to the neglect of operational and tactical dimensions. At the same time, it exerted a malign effect on traditional defense posture akin to that of a crutch, which encouraged maldeployments and the erosion of traditional military skills.<sup>90</sup>

English's Model I analysis presents the most common view of the development of tactical airpower during the 1950s. Further examination of the organizational and senior leadership levels however, will provide alternative insights into the decision-making process that played a role in the development of tactical airpower prior to Vietnam.

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<sup>89</sup> English, 140.

<sup>90</sup> English, 140 –1.

## **Chapter 4**

### **Model II Analysis: An Organizational Perspective**

The previous Model I analysis indicated that conventional tactical combat airpower was neglected at the broad, upper echelon or systemic level within the USAF as a result of national security policy and military strategy. However, is it accurate to say that tactical airpower was ignored below the systemic level? Despite the fact that a greater part of the Air Force's budget was devoted to the strategic nuclear mission during the 1950s, did the Air Force, at various organizational levels, continue to develop and promote conventional tactical airpower in the years following Korea?

From World War Two through Vietnam, entities such as the National Advisory Committee on Aeronautics (NACA), the United States Air Force Scientific Advisory Board, the Air Materiel Command, and the USAF Fighter Gunnery School (to name a few) were responsible for developing and/or improving tactical combat airpower to varying degrees. Notwithstanding the paucity of funds allocated to tactical airpower, Air Force organizations such as those listed above, along with Tactical Air Command (TAC) and Air Research and Development Command (ARDC), did not entirely neglect tactical conventional airpower between the Korean and Vietnam Wars. Using Allison's Model II decision-making construct, I will show how various organizations within the USAF continued to emphasize tactical airpower, although the consequence of their efforts

produced mixed results for tactical conventional airpower. In this chapter, I will begin with a description of Allison's second decision-making model. Then, using the Model II framework to explain organizational decision-making, I will elaborate on how several Air Force establishments worked to advance tactical combat airpower during the Eisenhower Administration. Finally, I will summarize the results and provide a Model II analysis of Air Force decision-making as it relates to this thesis.

## **Model II Decision-Making**

Graham T. Allison's second model attempts to explain the decision-making process of governments by understanding how the various organizations and sub-organizations within government conduct their business on a routine basis. Contrary to considering the state as a unitary rational actor, Allison's second model postulates that the government is actually a "conglomerate of semi-feudal, loosely allied organizations, each with a substantial life of its own.... Governmental behavior can therefore be understood,... less as deliberate choices and more as *outputs* of large organizations functioning according to standard operating procedures" (emphasis in original).<sup>91</sup>

Large organizations tend to be complex units that consist of smaller sub-units, all of which are directed by humans who have a limited capacity to generate alternative courses of action, process information, and solve problems (described as bounded rationality).<sup>92</sup> In fact, Allison asserts that organizational problems can be so complex that organizations will tend to split up or "factor" problems into smaller parts in order to deal with those

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<sup>91</sup> Graham T. Allison, *The Essence of Decision: Explaining the Cuban Missile Crisis* (New York: Harper Collins Publishing, 1971), 67.

<sup>92</sup> Ibid.

problems independently.<sup>93</sup> Often, an organization's structure reflects how a unit factors its problems. The Department of Defense, for example, is structured by services, each of which deals with specific methods of warfare (land, sea, and air). Although each service is independent, their areas of expertise can overlap (e.g. each service has some airpower). Nevertheless, each service contributes in a different way to the defense of the United States and the achievement of national security objectives. Then, as now, the Air Force was sub-divided to contend with its functional missions.

When each organization or sub-organization proceeds through the decision-making process, the units, which are led by humans, tend not to conduct an all-inclusive search for the best possible alternative. Rather, individuals within the unit are inclined to search for an alternative that is "good enough" to meet its objective(s) and conclude their search when the first alternative is found that will "satisfy" the organization's problem.<sup>94</sup> That is not to say that establishments are unstructured in their search process, but rather, simply restrictive in the number of alternatives sought for consideration. Moreover, organizations will often reflect on past decisions in order to find answers for current problems (especially if it is a reoccurring problem). Organizations tend to continue to use solutions that worked in the past and limit the "repertoire" of their choices. Additionally, leaders in the units are hesitant to base decisions on uncertain futures and will choose options that emphasize "short-run feedback."<sup>95</sup> For example, the Air Force may determine its pilot training capacity by simply estimating the number of pilots leaving the service in the upcoming year. This method of decision-making fails to contend with such factors as the change in demand for pilots in time of war. By not

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<sup>93</sup> Ibid.

<sup>94</sup> Ibid.



allowing for slack in the capacity to produce more pilots in time of war, the supply of peacetime pilots will not make up for the high demand in war (as was the case during the Korean War). Unfortunately, organizations do not like to make decisions that are based on an uncertain future and therefore, often may make decisions that appear shortsighted.

Although an organization's behavior does tend to remain fairly steady, units do have the capacity to learn from past mistakes and may change incrementally over time. When change is determined to be in the unit's best interest, an organization may alter its goals, rules, and procedures. Furthermore, when faced with decisions, organizations often tend to view the decision-making process with a unit bias. Parochial priorities and perceptions will prejudice an organization's search for alternatives for a particular course of action.<sup>96</sup> For instance, in Korea the Army considered the mission of close air support (CAS) to be vital to the success of the ground operation. The Air Force, conversely, perceived CAS as a diversion from airpower's best use—influencing the enemy behind the front through strategic bombardment or aerial interdiction. As a result of organizational bias, the Air Force de-emphasized CAS at times during the Korean War in favor of the aerial interdiction mission. By comprehending an organization's priorities, perceptions, and issues, a unit's decision-making process and its propensity to change/improve over time may be better understood.

One final factor that influences how organizations make decisions is called "imperialism." According to Allison, many organizations state their principal goal as improving the *health* of the unit. Health or imperialism can be defined in terms of

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<sup>95</sup> Ibid.

<sup>96</sup> Ibid., 81.

“growth in budget, manpower, and territory.”<sup>97</sup> When “New Look” became the United States’ national security policy, nuclear weapons were the primary means of fulfilling the US national security objectives. This fact resulted in both the Navy and Air Force fighting for a piece of the nuclear pie. After the “revolt of the Admirals” (discussed in Chapter 2), the Air Force’s imperialism over the strategic nuclear mission ensured that the USAF would remain healthy for the immediate future. From a Model II perspective, the Air Force’s decision to favor nuclear weapons can be explained as the principal way the organization would increase its stature and power in a time of defense down-sizing (not to mention that strategic nuclear attack fit nicely into the contemporary airpower doctrine).

In the subsequent sections of this chapter, I will elaborate on various Air Force organizations and their decisions to advance tactical conventional airpower during the 1950s. By applying Allison’s Model II analysis to multiple unit-level decisions, a better understanding may be obtained concerning the advancement of tactical airpower within the United States Air Force. I will expand upon four areas of interest: the Tactical Air Command’s decision-making process, the development and procurement of tactical aircraft, conventional munitions, and the progress of training that furthered conventional tactical airpower.

## **Tactical Air Command**

The Air Force, like all large organizations, consists of several smaller organizations. Between Korea and Vietnam, many of these organizations contributed to the development of airpower in a variety of ways. In January 1946, General Eisenhower

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<sup>97</sup> Ibid., 93.

(then Army Chief of Staff) and Chief of the Army Air Forces General Carl Spaatz agreed to reorganize the Army Air Force by function for the post-war environment.<sup>98</sup> The commands included Strategic Air Command, Air Defense Command, Tactical Air Command, Air Training Command, Air Materiel Command (March 1946), and the Air Transport Service. Strategic Air Command (SAC) was “charged to conduct long-range operations in any part of the world at any time; to perform maximum long-range reconnaissance over land or sea; and to provide combat operations in any part of the globe, employing the latest and most advanced weapons.”<sup>99</sup> The Air Defense Command was delegated the mission of defending the continental United States while the Tactical Air Command (TAC) was developed to retain a close working relationship with ground forces. Although fighter aircraft were placed in each of these three commands, TAC was given the job of preparing for conventional warfare. TAC was required to “cooperate with land and sea forces in ground and amphibious operations and to train and equip tactical air units for operations anywhere in the world. It was also charged to promote ‘progressive development of air-ground coordination techniques and doctrines.’”<sup>100</sup> By factoring airpower into separate organizations, General Spaatz and the United States Air Force (after its establishment on September 1947) were better able to contend with the complex problems associated with the decision-making of the varying airpower missions.

Tactical Air Command was the Air Force’s primary tactical airpower organization and was lead by several noteworthy individuals during the early years of the Air Force. Leaders such as Generals Elwood “Pete” Quesada, Robert M. Lee, Glenn O. Barcus, John

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<sup>98</sup> Robert F. Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force 1907 – 1960* (Maxwell AFB, Ala: Air University Press, 1989), 207.

<sup>99</sup> Ibid.

<sup>100</sup> Ibid., 208.

K. Cannon, Otto P. Weyland, and Frank F. Everest endeavored to advance their organization along the path for which it was established. Of all these leaders, General Weyland remains the TAC leader who is remembered as being the foremost advocate of tactical airpower during the 1950s. Weyland's career was predominantly in the tactical fighter realm. During World War Two, he commanded the famed XIX Tactical Air Command, which was renowned for its role in supporting General George Patton's Third Army push through Germany. Weyland went on to serve as Ninth Air Force Commander, Assistant Commandant of the Command and General Staff School (CGSS), Chief of Staff of the Air Staff for Plans and Operations, Far East Air Force Commander in Korea, and then Commander of TAC from April 1954 to July 1959.<sup>101</sup>

General Weyland's career combined with his education at the Air Corps Tactical School and CGSS during the 1930s made him well suited to command Tactical Air Command. Recalling his close working relationship and educational background with the Army, Weyland said, "I did get to know the Army forwards and backwards, which helped me later on going through various schools. So I picked up a lot of information and knowledge and appreciation of what they have to do and what their problems were."<sup>102</sup> As a result of his World War Two and Korean War experiences, General Weyland understood that a well-balanced tactical air force would be required to contend with the various war contingencies of the 1950s. In fact, he was one of the first Air Force leaders who advocated the possibility of "periphery" or "bush-fire" wars and the

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<sup>101</sup> History, Headquarters, Tactical Air Command, "Biography: General O. P. Weyland," *TAC History*, 1 Jan – 30 Jun 1955, Vol. I: "Status and Capabilities of the Command, Supp. Doc. #12; and "USAF Leaders Through the Years," *Air Force Magazine*, May 2000, 50.

<sup>102</sup> Gen O. P. Weyland, transcript of oral history interview by Dr. James C. Hasdorff and Brig Gen Noel F. Parrish, 19 November 1974, 22 – 3, located at USAF Historical Research Agency, Maxwell AFB, Ala.

necessity of a viable conventional force to win those limited wars.<sup>103</sup> To ignore the possibility of limited war, Weyland warned, would be an invitation to disaster.

Parochial priorities and perceptions of General Weyland and his Tactical Air Command staff greatly influenced how grand strategic airpower problems and decisions were viewed. The larger Air Force organization (and SAC) approached US national security problems with the narrow view that strategic bombardment was the principal means of waging war, while TAC members viewed America's problems from a tactical airpower perspective. With the responsibility for cooperating and coordinating with surface forces, TAC members were inclined to approach airpower problems from a point of view consistent with past tactical employment practices. The application of limited force in Korea was in the minds of the TAC staff members and served as a guide. The effect was to search for ways of completing America's national security policy of assisting allies in need without escalating a conflict to a general nuclear war. At one level, Air Force leadership advocated for a worst-case, nuclear war preparation, which would ensure the continued growth of the Air Force budget and territory through the advancement of strategic airpower. On a lower level, General Weyland argued at a 1954 commanders' conference that the brush-fire war, in an area of the world where America was least prepared, was the most probable form of future conflict.<sup>104</sup> To contend with this probability, Weyland proposed the advancement of tactical airpower capabilities, which would provide for growth of TAC. Differing parochial views, at different

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<sup>103</sup> Caroline Frieda Ziemke, "In the Shadow of the Giant: USAF Tactical Air Command in the Era of Strategic Bombing, 1945 – 1955" (an unpublished doctoral dissertation presented to the Ohio State University, 1989), 263.

<sup>104</sup> Futrell, *Ideas*, 448.

organizational levels presented diverging recommendations to the national security problems facing the United States.

Despite Weyland's unique insights into the future possibility of conflict, he realized that the money available for expansion was only in nuclear missions. Even prior to Weyland's assumption of command at TAC, General Cannon had begun to lay the foundation for developing tactical airpower that could employ tactical nuclear weapons.<sup>105</sup> After assuming command, Weyland postulated that tactical airpower would provide the flexibility and versatility in limited wars that strategic bombers could not furnish. By arguing that tactical airpower with tactical nuclear and conventional munitions could contribute to both general war and peripheral wars, Weyland perceived a way to advance tactical airpower.<sup>106</sup> If TAC was to improve its health, then tactical nuclear weapons were the necessary means for future advancement.

To further increase the "territory" or spectrum of influence of tactical airpower, Weyland originated an idea to develop a mobile tactical air force as a deterrent to local brush-fire wars. Initiated in 1954 by Weyland and developed in detail by a Air War College thesis written by Col Richard P. Klocko entitled "Air Power in Limited Military Actions," *Ready Air Fleets* were envisioned to be state-side tactical airpower units that could deploy anywhere in the world at a moment's notice.<sup>107</sup> Klocko described a fleet-in-being that could deter local aggression. The Ready Air Fleet could include:

- 1 Medium Bomb Wing with 1 Squadron Medium Strategic Recon attached;
- 1 Fighter Interceptor Wing (All Weather);

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<sup>105</sup> Ziemke, 263.

<sup>106</sup> Martin, 281.

<sup>107</sup> Col Richard P. Klocko, "Air Power in Limited Military Actions," Air War College Study Group thesis no. 7 (Maxwell AFB, Ala: Air War College, August 1954), 64, located in Air University Library Maxwell AFB, Ala.

- 1 Light Bomber Wing (Night and All Weather);
- 2 Fighter Bomber Wings;
- 1 Tactical Recon Wing;
- 1 Medium Troop Carrier Wing;
- 2 Squadrons Medium Transport;
- 4 Squadrons Aerial Refueling (capable of refueling all types of combat aircraft in the command);
- 1 Aerial Resupply and Communication Group; and
- 1 Ground Defense Task Force composed of 6 Defense Flights and
- 1 Support Flight.<sup>108</sup>

In addition, all the necessary support and auxiliary units would be required to deploy with the fleet. Subsequently, the Ready Air Fleet was adopted and renamed the Composite Air Strike Force (CASF). This force would contribute to national security objectives by being the nation's first line of defense in case of limited war and could augment Strategic Air Command's capability to deter general war.

In July 1955, TAC established Nineteenth Air Force, which had the responsibility of developing the CASF concept. With much trouble, Nineteenth Air Force Commander, Brig Gen Henry Viccellio fulfilled Weyland's idea. By September 1956, Viccellio was able to deploy a token Composite Air Strike Force to Europe. The CASF included "one squadron of F-100C day-fighters, one squadron of F-84F fighter-bombers, a flight of B-66 tactical bombers, and a flight of RF-84F reconnaissance aircraft."<sup>109</sup> Although the concept did not increase the size of TAC by procuring more tactical airpower, CASF did provide a tool to project tactical airpower quickly to confront a limited war. Finally, TAC had a capability (although limited and heavily reliant upon, but not confined by nuclear weapons) to project tactical airpower around the world. With this newfound

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<sup>108</sup> Ibid., 65.

<sup>109</sup> Futrell, *Ideas*, 450.

capability, Tactical Air Command's *imperialism* would grow in stature within the Air Force and help ensure its survival in a nuclear dominated military.

From a Model II perspective, General Weyland and TAC may have instituted the CASF based on past precedence of deployments and wartime procedures. During both World War Two and the Korean War, fighters were deployed overseas for those conflicts. By reflecting upon past fighter deployments, it is not a stretch of the imagination to conclude that CASF may have been developed to repeat those past deployment capabilities. By re-instating the deployment practice, CASF essentially became part of contemporary standard operating procedure for TAC. Furthermore, by establishing CASF, General Weyland attempted to improve the health of TAC by increasing the spectrum of influence to overseas locations. Once this was established, further funding would likely follow.

The United States Air Force and Tactical Air Command's efforts to advance tactical airpower were not limited to the creation of the Composite Air Strike Force. Aircraft, munitions, and training were developed during the 1950s that contributed to the employment of conventional tactical airpower. Aircraft research and development fell under the direction of Air Research and Development Command and, unfortunately, TAC had only an indirect say in ARDC decisions through the recommendations for improvements.

### **Tactical Airpower Research and Development**

Following World War Two, both research and development and procurement and production of new aircraft systems were the responsibility of Air Materiel Command (AMC). In 1950, the Air Force divided up the responsibilities. Logistical procurement



and production of aircraft systems remained in AMC, but the research and development aspect now fell under the Air Research and Development Command (ARDC).<sup>110</sup> The Deputy Chief of Staff, Development, in Headquarters USAF was also created to provide senior-level guidance to all research and development efforts within the Air Force. In April 1951, USAF Chief of Staff General Vandenberg assembled the Air Force Council to handle all senior level decisions. Working with the Headquarters Air Staff and the Aircraft and Weapons Board, the Air Force Council determined the final Air Force policy regarding what weapons systems to develop.<sup>111</sup>

The success or failure of this new arrangement of aircraft systems was based upon the speed and the quality of new developments. Proper planning for new weapons systems would ensure that the Air Force would remain at the cutting-edge of aircraft technology. A weapons system included every aspect of the aircraft from airframe to propulsion, to avionics, to munitions. All aspects of the aircraft had to be compatible and had to meet the specifications set by Headquarters.

The normal programmed flow from concept to actual weapon system followed a specified course. Based on needs determined from senior Air Staff planners, the Air Staff and the Aircraft and Weapons Board would make recommendations to the Air Force Council, which would in turn inform the Air Research and Development Command what system to develop, why it was necessary, and how it should perform. TAC also provided its desired specifications for future tactical airpower developments and modifications. ARDC designed the specifications and evaluated the contractors' proposals. After the Air Force Council approved a design, ARDC would work closely with the contractor to

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<sup>110</sup> "The Tools: Weapons," in *Air Force Magazine*, August 1957, 343 (hereafter cited as *Tools*).

<sup>111</sup> Futrell, *Ideas*, 306.

construct an experimental model. The model would undergo a battery of tests to determine if it met the established standards and could withstand combat conditions. If the model passed the tests, then production would commence. The typical development-to-production timeframe for aircraft would consume four to eight years.<sup>112</sup> The final aircraft production decisions were ultimately based on the Air Force Council's direction.

The Air Force relied upon civilian research and development guidance in order to stay abreast of current technology. The USAF Scientific Advisory Board (SAB), established in 1944 by General Henry H. Arnold, was charged with "providing scientific-technical advice aimed at insuring aero-space supremacy."<sup>113</sup> Consisting of senior scientists, SAB worked closely with civilian aircraft industry experts, universities, and the Rand Corporation to provide the Air Force with recommendations for future areas of development in order to remain the world's aviation leader. The SAB recommended development or improvement in such weapons system programs as vertical take-off aircraft, air-to-air fire control equipment, infrared search and track equipment, conical scanning radars, electronic combat measures, and airborne gun sights.<sup>114</sup> The Air Force would take the board's many recommendations and incorporate them into current designs or would upgrade already produced systems to remain ahead of threat capabilities. The SAB was instrumental in improving the capabilities of tactical airpower throughout the 1950s.

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<sup>112</sup> *Tools*, 344.

<sup>113</sup> Department of the Air Force, *A Resume of the History and Mission of the United States Air Force Scientific Advisory Board*, (Washington D.C.: United States Government Printing Office, January 1963), 2, located at the Air Force Historical Research Agency, call number K168.151.

<sup>114</sup> Minutes of the Scientific Advisory Board meetings held during the time 1950 to 1960, located at the Air Force Historical Research Agency, call number K168.1510.

Research and development funding prior to the Korean War was relatively modest, but grew rapidly during the 1950s. In 1950, the Air Force spent over \$62.3 million on research and development. By 1957, funding had increased to over \$720.5 million.<sup>115</sup> The appropriations would continue to rise incrementally throughout the remainder of the decade, although nuclear weapons research consumed a significant portion of the budget. By 1960, over half of the total research and development budget was directed toward intercontinental and intermediate range ballistic missiles and electronics.<sup>116</sup> Tactical airpower received a minute portion (\$20 million out of \$1.043 billion) of the research and development budget for 1960.<sup>117</sup>

Several lower-level organizations contributed in various ways to the development of tactical airpower and made up the ARDC. ARDC consisted of ten centers that watched the scientific research and development of civilian industries and universities. These ten centers determined weapon specifications and standards, evaluated final products, researched highly specialized military areas not researched in the civilian sector, and supervised the development of most weapons systems.<sup>118</sup> Of the ten centers, the Wright Air Development Center and Flight Test Center conducted the development and evaluation of new weapons systems, which contributed to tactical aircraft production. Both the Armament Center and the Air Proving Ground Command worked to advance tactical conventional munitions. Although the emphasis at the time was on nuclear weapons, conventional airpower research and development continued to be part of the

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<sup>115</sup> *Tools*, 345.

<sup>116</sup> Minutes of the Scientific Advisory Board meetings October 1960, p 1, located at the Air Force Historical Research Agency, call number K168.1510.

<sup>117</sup> Senate, *Department of Defense Appropriations for 1960 Hearings*, 84<sup>th</sup> Congress (Washington D.C.: United States Government Printing Office, 1960), 1143 – 52.

<sup>118</sup> *Tools*, 345.

standard operating procedures of these organizations. These standard operating procedures ensured conventional weapons capabilities were included in future aircraft designs.

## **Tactical Aircraft**

At the Department of Defense level, aircraft research and development began under the direction of the Research Airplane Program (RAP). RAP was a joint research effort by the NACA and the military services.<sup>119</sup> Conceived near the end of World War Two, the RAP performed flight studies using a series of specially designed research aircraft. From the late 1940s through the 1960s, research was conducted in an effort to improve manned flight in aircraft at speeds up to and in excess of 4,500 miles per hour and at altitudes up to and greater than 350,000 feet. Two general categories of aircraft were developed for the research airplane program. The first category of aircraft was designed to improve jet aircraft performance and included such designs as the X-1, D-558 I, X-1A, X-2, and the X-15. The second category was constructed to investigate the effects of different aircraft configurations and included such designs as the X-3, X-4, and X-5.<sup>120</sup> The entire aviation industry contributed and benefited from the testing. The tangible effect of the RAP for the Air Force was the incorporation of research results into the supersonic fighter aircraft that were developed throughout the 1950s.

RAP was the foundation for the aeronautical engineering theory that the Air Force relied upon to construct its fighter designs. The Air Force used the theoretical foundations from RAP and incorporated the recommendations of the Scientific Advisory

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<sup>119</sup> "NASA Facts: Research Airplane Program," n.p.; online, Internet 15 December 2000, available from <http://dfrc.nasa.gov/PAO/PAIS/HTML/FS-031-DFRC.html>.

<sup>120</sup> Ibid.

Board with various suggestions provided by the ARDC centers to formulate aircraft designs that could meet near-term fighter aircraft requirements as determined by Air Force objectives. For instance, the Air Force Council directed the development of the F-100 based on the supersonic testing of the RAP, the recommendations of the Scientific Advisory Board, the evaluation and suggestions for improvements from the Air Proving Ground Command (among other centers), and the Air Force's need to replace the obsolescent F-86.

The decision-making process (simplified here) and the many steps to final procurement of the aircraft were influenced by the several organizations involved. Each of these organizations had standard operating procedures governing how they influenced the research, development, and procurement process of fighter aircraft. Prior to the Korean War, tactical aircraft designs were based on a non-nuclear mission. As a result, many organizations had established procedures for aircraft design with a non-nuclear mission. Following Korea, the nuclear mission grew in importance within tactical airpower design. However, the conventional (non-nuclear) role of tactical airpower did not cease to exist. By examining four fighter aircraft in particular (the F-100, F-101, F-104, and F-105), I will show how tactical aircraft development decision-making within the Air Force impacted the tactical conventional mission.

### **F-100 Super Sabre**

The North American F-100 Super Sabre was the first in the line of the Air Force's "Century Series" fighters and the first supersonic fighter produced. Intent on quickly developing a replacement fighter, the Air Force Council agreed with the Aircraft and Weapons Board's recommendation to begin production on the F-100 prior to flight-

testing in 1953.<sup>121</sup> From its inception, the Super Sabre was envisioned to be a clear weather, air superiority fighter, but ultimately was designed and employed as a fighter-bomber.<sup>122</sup> Design modifications and procurement of the F-100 continued simultaneously from 1951 through 1955. As a result of a series of evaluations during this period, several organizations recommended modifications and improvements to the design of the F-100 in order to increase its air-to-air and air-to-ground kill potential. In December 1953, “black boxes” and a larger tail fin were added to improve handling qualities and controllability. Larger internal fuel tanks and 450-pound external fuel tanks were added to increase range. Although designed strictly as a conventional fighter, TAC asked that the F-100 be modified to allow for tactical nuclear munitions.<sup>123</sup> To improve nuclear munitions delivery, an Office of Science and Technology report suggested that the F-100 incorporate the low-altitude bombing systems (LABS).

On a conventional level, the Super Sabre possessed the latest conventional weapons setup. The F-100 utilized the AB/APG-30 radar and could employ the AIM-9B air-to-air missile. Later model F-100s were modified to carry the GAM-83 Bullpup command guided bomb, which was one of the first precision-guided munitions (see tactical munitions below). Other conventional munitions included 2.75-inch forward firing aerial rockets, four 20mm M-39 machine guns, and up to 5,000 pounds of general purpose bombs. External stores, both munitions and external fuel tanks, were designed to be carried beneath the wings and on the centerline of the aircraft. With the J-57-P-7 jet engine and state-of-the-art aircraft design, the F-100 was designed to be a highly

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<sup>121</sup> Knaack, 113.

<sup>122</sup> Bert Kinzey, *F-100 Super Sabre* (Blue Ridge Summit, Pa: Tab Books, Inc., 1989), 4.

<sup>123</sup> Knaack, 115.

maneuverable fighter that rivaled the latest Soviet fighters (MiG-19 Farmer).<sup>124</sup> Additional modifications to convert the F-100 into reconnaissance and “Wild Weasel” surface-to-air missile (SAM) suppression platforms would make the Super Sabre one of the Air Force’s most versatile conventional tactical fighter during the 1950 and 1960s. In all, 2,294 F-100s of all types were produced for the Air Force.

Although, the F-100 was one of the first USAF jets to be employed in combat in Vietnam, it did so with several employment limitations. First, the Super Sabre had one of the worst accident rates of the century-series aircraft. This was due primarily to an under-powered engine that had afterburner nozzle problems and control problems associated with design characteristics.<sup>125</sup> Second, some conventional weapons could not be supported by all F-100s, while others could only carry a limited number if properly modified. For example, only 125 of the Air National Guard’s F-100Ds could carry the AIM-9B and the Bullpup.<sup>126</sup> Similarly, only the F-100F possessed 375 rounds of gun ammunition, while the rest only had 200. Third, only the D and F models of the Super Sabre were configured with a radar-warning receiver (RWR) to detect if and when enemy radars were targeting the F-100. The RWR proved invaluable in North Vietnam against one of the world’s most heavily defended air spaces.

### **F-101 Voodoo**

McDonnell’s F-101 Voodoo was originally conceived as a long-range escort for SAC’s nuclear bombers. Developed from lessons learned from the Korean War, the F-101 was intended to penetrate Soviet air defenses in order to protect nuclear weapons

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<sup>124</sup> Kinzey, 5.

<sup>125</sup> Ibid., 7.

<sup>126</sup> Ibid.

carrying bombers.<sup>127</sup> The Air Force Council in 1952 approved the alteration of design that would change the mission of the F-101 from an interceptor to a nuclear fighter-bomber. The F-101A and C models were designed for the tactical nuclear role and possessed no conventional capability. TAC reluctantly received its first Voodoo in 1957, but was disappointed in being forced to accept this aircraft because it was not constructed to operate on short, unprepared runways, which was a requirement of all TAC's deployable jets.<sup>128</sup> The Voodoo was transformed into a reconnaissance platform and continuously updated based on examination by several organizations and improvements developed by electronics industry. Of all the versions of the F-101, TAC used the reconnaissance version the most. Although delivered to TAC without all the necessary photographic equipment, the RF-101 quickly developed to replace all other reconnaissance versions of aircraft (RF-84 and RF-100) and became TAC's reconnaissance workhorse.<sup>129</sup> The McDonnell Aircraft Corporation finally built an interceptor version (F-101C) to be used by the ADC, but the Voodoo's greatest contributions to tactical airpower was in the form of tactical reconnaissance.

### **F-104 Starfighter**

The Lockheed F-104 Starfighter was originally designed from lessons learned from the Korean War to be a lightweight, day only air superiority fighter. First flown at the Air Force Test Center in February 1956, the F-104 encountered several engine problems on its way to become the first production aircraft capable of flying faster than Mach

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<sup>127</sup> Knaack, 135 – 8.

<sup>128</sup> Ibid., 140.

<sup>129</sup> Ibid., 147 – 9.



two.<sup>130</sup> The Air Defense Command received its first Starfighter in 1958 and employed it as an interceptor (F-104A). The heart of the F-104's fire control system was NASARR (North American search and range radar), which was capable of air-to-air (look down, shoot down) and air-to-ground modes.<sup>131</sup> NASARR represented the state-of-the-art technology for tactical conventional airpower. Augmenting the F-104's radar was a newly designed infrared sight conceived to detect enemy heat signatures at short to medium distances.

Along with the state-of-the-art fire control system, the Starfighter could employ all the latest conventional munitions. The F-104A could deliver AIM-9B air-to-air missiles, 2.75-inch rockets, and 930 pounds of conventional bombs. Although initially proposed with the Vulcan M-61 20mm cannon, testing concluded that the gun was unreliable and removed from the jet.<sup>132</sup> The M-61 (which became the primary air-to-air gun) was retrofitted back into the F-104 in 1964 when all the deficiencies had been resolved. The F-104 was also originally designed with a downward firing ejection seat, but it proved highly unsatisfactory. Due to design problems, both versions of the Starfighter interceptor (F-104 A and B) were as quickly phased out of ADC as they were accepted.

TAC received its first fighter-bomber version of the F-104 in 1958. The F-104 C/D/G were modified based on recommendations of ARDC to include a more powerful engine, a new ejection seat, an external probe-drogue air refueling system, and external nuclear munitions.<sup>133</sup> The final version of the Starfighter was capable of all-weather

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<sup>130</sup> Ibid., 172.

<sup>131</sup> Arthur Reed, *F-104 Starfighter* (New York: Charles Scribner's Sons Publishing, 1981), 29.

<sup>132</sup> Ibid., 28.

<sup>133</sup> Knaack, 182.

fighter-bomber operations with a capacity to carry 2,510 pounds of conventional munitions, AIM-9Bs, 2.75-inch rockets, and the retrofitted M-61 20mm internal cannon. Although not originally developed as an all-weather fighter-bomber, the amazingly quick F-104G possessed an respectable conventional capability.

Conceived to fly higher and faster than any Soviet fighter of the time, the F-104 had several serious deficiencies. First, the Starfighter possessed stubby little wings, which did not provide for the necessary maneuverability for close-in dog fighting. In fact, during one its rare combat dogfights in 1965, a Pakistani F-104 was outmaneuvered by an Indian Mystere. Similarly, the USAF restricted its F-104 deployed to Southeast Asia to performing high altitude patrols that were far away from any enemy MiGs and were relegated to screening B-52s bombing jungle targets over South Vietnam.<sup>134</sup> Second, the F-104 had a relatively poor combat radius compared to other current fighters and contributed to its removal from service in 1968. Third, although the Starfighter could carry the latest conventional and tactical nuclear munitions, its pilots did not consider the F-104 a viable weapon system for air defense. With only two seconds of gun employment possible and two air-to-air missiles, ADC pilots felt that the F-104 would be quickly out of ordnance if forced into combat. When faced with the responsibility of defending the United States from Soviet bombers, the only remaining option for completing the mission was that of ramming incoming Soviet aircraft.<sup>135</sup> Fourth, the F-104 killed a lot of its pilots—mostly German (Germany had purchased several during the late 1950s and 1960s).

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<sup>134</sup> Reed, 75.

<sup>135</sup> Leroy Doig, Historian at the United States Naval Weapons Center at China Lake, California, interviewed by author, 20 February 2001; *USAF Research & Development Quarterly Review*, Summer 1957, 28.

## **F-105 Thunderchief**

Republic's F-105 Thunderchief ("Thud" for short) was developed out of the Korean War experience and conceived by company designers working in close cooperation with TAC and the USAF Special Weapons Center at Kirtland AFB, New Mexico. Initially designed as a low-level tactical bomber capable of delivering one nuclear weapon deployed from an internal bomb bay, the F-105 evolved into a fighter-bomber that witnessed seven years of combat in Vietnam employed in roles it was not designed for.<sup>136</sup> After receiving the "go ahead" from the Air Force Council (with recommendation from the Aircraft and Weapons Board) in 1952, the Air Force began production and testing of the new supersonic tactical bomber in 1955. Modifications were suggested and implemented based on tests conducted at the Flight Test Center and the Special Weapons Center. Further testing at NACA resolved design problems that had limited the fighter to subsonic speeds and caused instability problems at normal operating angles of attack. By 1958, eleven different F-105s were being tested at five different test facilities around the United States.<sup>137</sup> Concurrently, the Air Force issued a GOR (General Operational Requirement – defines aircraft mission and other performances and capabilities) stating that new J75 engines, an advanced fire-control system, and an in-flight refueling capability be added thirty-one months after the Air Force Council gave the go ahead decision.<sup>138</sup> These setbacks and a company strike delayed entry of the Thunderchief into operational service until August 1958.

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<sup>136</sup> David Anderson, *Republic F-105 Thunderchief* (Osceola, Wis: Motorbooks International, Inc., 1983), 12 – 16.

<sup>137</sup> Ibid., 43 - 4.

<sup>138</sup> Ibid., 20.

The evolution of the F-105 continued throughout the remainder of the decade. In May 1957, the Air Force Council decided it wanted the Thunderchief to be an all-weather capable attack aircraft. Improvements to flight instrumentation and navigation equipment showed up first. In 1959, the new TAC Commander, General Frank Everest, decided to accept the F-105 as its newest fighter-bomber due to the Thud's short take-off capability.<sup>139</sup> This decision resulted in modification of delivery capabilities to accept conventional munitions. A new engine, the J-75-P-19, and a new fire-control system (MA-8) were added. This added capability improved the speed of the Thud and its ability to bomb visually or blind.<sup>140</sup> Later modifications allowed the F-105 to be employed as a Wild Weasel, replacing the F-100 wild Weasel.

Later models of the Thunderchief were the Air Force's principal fighter-bomber during the early years of the Vietnam War capable of delivering the greatest conventional air-to-ground munitions loads while employing air-to-air ordnance for self-defense. The Thud could carry up to sixteen 750-pound conventional bombs at supersonic speeds while at treetop level. It could also employ with every conventional munition then available, including the GAM 83 Bullpup (F-105D and later models). Moreover, the F-105 was created with an internal M-61 20mm cannon with enough ammunition for eleven seconds of employment. For longer-range shots, the Thud could shoot the AIM-9B heat-seeking missile.<sup>141</sup> The Thunderchief did have its faults though. First, similar to past fighters, the F-105 was not deployed to Southeast Asia with radar warning receivers. It

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<sup>139</sup> Ibid., 56 – 66.

<sup>140</sup> Knaack, 196.

<sup>141</sup> During the 1950, the USAF postulated that air-to-air missiles would be so effective at ranges beyond that of the gun that there was little chance of dogfighting in the future. Identification difficulties during the Vietnam War, however, demonstrated that longer-range missile shots were passed up until an aircraft could be identified. The gun still proved a valuable weapon.

did receive RWR later during the war. Second, designed as a low altitude bomber, the F-105 experienced severe battle damage in combat as a result. As mentioned earlier, the Thud was not designed for operations in such environmental conditions. The non self-sealing internal fuel tanks and the dual hydraulic line placed close together were significant limitations for combat employment. Third, the poor relative maneuverability and poor rearward visibility did not make the F-105 a formidable dogfighter. In all, F-105s shot down 27 and one half MiGs during the Vietnam War, but lost 383 of the Air Force's total inventory (833) during the seven years of combat in Southeast Asia.<sup>142</sup>

Comparing USAF and Soviet fighters, it is readily apparent that the Air Force did not devote a sufficient amount of effort to aerial maneuverability. In 1965, the USAF Fighter Weapons School at Nellis AFB, Nevada conducted a series of performance tests to rate current USAF fighters against the MiG-15/17 type of aircraft. The Fighter Weapons School evaluated the F-100, F-104, F-105, and F-4C (all of which were not designed to be dogfighters) to determine their strengths and weaknesses versus the Soviet jets. In all cases, the Air Force jets could not adequately compete with the Soviet-made fighters.<sup>143</sup> Using F-86Hs as the MiG simulator, USAF aircraft attempted to maneuver against the threat in both offensive and defensive scenarios. In each instance, the threat aircraft was able to out-maneuver the "modern" US fighters. The report suggested that USAF pilots should avoid any maneuvering fight with this type of threat aircraft and attempt to accelerate away from a fight at the first opportunity. Given the level of emphasis on nuclear missions within the Air Force, USAF fighters were not developed to be highly

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<sup>142</sup> Only a small fraction of the Thuds were shot down in air-to-air combat. Most of the F-105s were killed as a result of the formidable North Vietnamese surface-to-air weapons. Lambeth, 13; Anderson, 195.

maneuverable or capable of defeating an adversary fighter in a dogfight. Aerial combat of past wars was not envisioned for future conflicts. The fact that fighter aircraft did not need to be highly maneuverable appears to be counter to all the lessons learned from both world wars and Korea.

From a Model II perspective, conventional fighter developments were heavily influenced by previous fighter development procedures. Since World War Two, fighters were developed for both air-to-air and air-to-ground capabilities. Despite the emphasis on nuclear weapons, those past procedures guided contemporary fighter design and as a result, conventional weapons remained part of the Century Series fighters. Established standard operating procedures allowed for continued tactical airpower improvements. As shown above however, not all the aircraft designs and conventional weapons capabilities were optimized for the warfare witnessed during Korea. Many design decisions were *satisficed* (compromised as a result of competing interests) and consequently led to degradation in fighter performance during Vietnam.

Further tactical aircraft research and development was severely restricted, however, with the launching of the Soviet satellite Sputnik in 1957. From the conclusion of World War Two to 1954, the Air Force asked for and received funding for the development of 23 different fighter aircraft. From 1955 to 1965, it would only ask for and receive funding for one.<sup>144</sup> Senior USAF leaders directed research and development funding almost entirely to strategic missions.

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<sup>143</sup> USAF Fighter Weapons School, "Air Combat Tactics Evaluation: F-100, F-104, F-105, F-4C Versus MiG-15/17 Type Aircraft (F-86H)," May 1965, located at the Air Combat Command History Center, Langley AFB, Virginia.

<sup>144</sup> Mike Worden, Col, USAF, *Rise of the Fighter Generals: The Problem of Air Force Leadership 1945 – 1982* (Maxwell AFB, Ala: Air University Press, 1998), 85.

## Tactical Conventional Munitions

As with the development of aircraft between the Korean and Vietnam Wars, the development of conventional munitions was also constrained by the contextual factors of the period. After the Air Force became an independent service in 1947, the Department of Defense did not want to see duplication of effort with regard to munition developments. The Air Force wanted to obtain control of the nuclear weapons development and did not see a need to fight over conventional bombs. As a result, the Air Force acquiesced and let the Army Ordnance Department continue its responsibility for developing and producing all high explosive, fragmentation, and semi-armor piercing bombs.<sup>145</sup> The Air Force was allowed to develop equipment that stayed with the plane (bombsights, fire control systems, guns, bomb racks, and rocket launchers). Incendiary bombs would continue to be the responsibility of the Army's Chemical Service. The responsibility of armor-piercing bombs was given to the Navy.<sup>146</sup> For air-to-air weapons, the 1950s witnessed the evolution of technology from unguided rockets of World War Two to guided infrared (IR) and radar-guided missiles. Since there was no stated organization with responsibility for missiles, both the Air Force and Navy embarked on the quest to develop aerial missiles. History illustrates how nuclear weapons were the predominant weapon during the era of the New Look, but conventional munitions were not entirely neglected.

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<sup>145</sup> David R. Mets, *Nonnuclear Aircraft Armament: The Quest for a Surgical Strike – The United States Air Force and Laser Guided Bombs* (Eglin AFB, FL: Office of History, Armament Division, Air Force Systems Command, 1987), 35 (hereafter cited as Mets, *Quest*).

<sup>146</sup> Mets, *Quest*, 35.

## Conventional Air-to-Ground Munitions

The origins of aerial bombing go back to World War One and even earlier when creative pilots decided to drop munitions by hand over the side of their planes. Since then, bombs have grown in size and lethality. The general-purpose bombs that were employed during the Korea War were the same bombs designed for World War Two. They included bombs in the 100, 500, 1,500, 2,000, 3,000, and 4,000-pound size class.<sup>147</sup> General-purpose bombs were designed to achieve maximum load out for internal carriage within bombers, which resulted in a stubby, non-aerodynamic shape. Due to the aerodynamic design of these general-purpose bombs, they remained fairly imprecise. Before and during World War Two, there was “little coordination between aircraft designers and bomb developers, and insufficient coordination even between the bomb and fuze designers.”<sup>148</sup> During the mid-1950s, the Navy developed the newer Mark-80 series bombs. Possessing problems with the fins and fuses, these bombs were not much of an improvement over the World War Two general-purpose bombs. The Army had improved the shapes of the older M-117 and M-118 bombs, but very little was accomplished in either the Air Force or Army to further bomb guidance.<sup>149</sup> From a Model II perspective, the Air Force was satisfied with contemporary general-purpose bombs and as a result, only spent its scarce research and development funds on nuclear-related munitions. If the Air Force (as an organization) was to improve its health, then it would have to develop nuclear weapons in order to match the current national security strategy.

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<sup>147</sup> David R. Mets, Draft, *The Orphans of Air Research and Development? The Evolution of Nonnuclear Aircraft Bombs* (Maxwell AFB, Ala: School of Advanced Airpower Studies, 1992), 16 (hereafter cited as Mets, *Orphans*).

<sup>148</sup> *Ibid.*, 20.



The development of cluster bomb units (CBU) and anti-tank munitions also stagnated during the 1950s. Given that there would be “no more Koreas,” it is not surprising that little work was accomplished on these types of weapons. If nuclear weapons could destroy any tank the enemy possessed, then why spend time and money to advance existing conventional weapons?

Despite the nuclear focus, however, the Air Force’s Air Proving Ground Command at Eglin Air Force Base in Florida was established in 1949 to collect and focus the conventional weapons developments for the Air Force. One of the projects the Proving Ground worked on was the US Navy’s guided aerial bomb (GAB-83) Bullpup. Guided munitions had their origins in World War Two with the Germans and continued to evolve through the Korean War.<sup>150</sup> Bombs such as AZON, RAZON and TARZON were in the USAF inventory. These guided munitions were not extremely accurate and exhibited deficiencies in guidance. Nonetheless, immediately after the Korean War, the Air Proving Ground, along with the Weapons Guidance Laboratory at Wright-Patterson AFB in Ohio, continued to analyze the deficiencies.

By the spring of 1954, the Secretary of the Navy approved the development of the Bullpup. Two versions of the guided bomb were produced. One was a “little” Bullpup (250 pounds warhead weight) and the other was a “big” Bullpup (1,000 pounds warhead weight). The Navy received its first Bullpup in 1958, while the Air Force did not accept delivery until 1960.<sup>151</sup> The Air Force’s part of the procurement of Bullpup was in conducting studies to determine how to incorporate this munition into current fighter designs. By the beginning of the Vietnam War, only the F-100D and F-105 were capable

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<sup>149</sup> Mets, *Quest*, 40.

<sup>150</sup> For a detailed examination of the history of precision-guided munitions, see Mets, *Quest*.

of employing Bullpup. The problem with the Bullpup was that it required radio guidance from the pilot for steering to the target. This meant that the pilot had to maintain sight of the guided-munition (visually watching a flare burning on the aft end of the missile) throughout the time of flight. Any interference from clouds or dust or a sudden change in flight path as a result of an enemy attack (from the air or ground) would cause the pilot to lose sight of the Bullpup. Once the visual was lost, the munition would not likely guide to the intended target.

As Secretary of State John F. Dulles unveiled the New Look in January 1954, a significant shift in emphasis occurred within the Air Force. Many of the scientists and weapons specialists at the Air Proving Ground and Weapons Guidance Laboratories reallocated their efforts to developing larger and more accurate nuclear weapons. Similarly, in the Army and Navy, weapons specialists were also concentrating on the nuclear aspects of munition development. At the Navy Ordnance Test Center at China Lake, just about everything that could fly or could be dropped was fitted with a nuclear warhead of some type. The emphasis was on what was possible and not on what should be done.<sup>152</sup> Nuclear munitions such as Snark, Rascal, Crossbow, Longbow, and Corvus evolved during the 1950s at China Lake.<sup>153</sup> Another conventional air-to-ground munition developed and procured during the 1950s by the Navy that made its way to the Air Force

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<sup>151</sup> Mets, *Quest*, 43 – 44.

<sup>152</sup> Leroy Doig, Historian at the United States Naval Weapons Center at China Lake, California, interviewed by author, 20 February 2001

<sup>153</sup> The US Navy went so far down the nuclear path that it developed and produced an aircraft powered by a nuclear reactor ramjet capable of speeds in excess of Mach 7. The sonic boom alone could kill anyone within one mile of the aircraft and the radiation's wake was so strong that nothing would grow for twenty-five years. Leroy Doig, Historian at the United States Naval Weapons Center at China Lake, California, interviewed by author, 20 February 2001; the Air Force was also working on a nuclear-powered aircraft, but it was canceled prior to development. See Barton C. Hacker, "Nuclear-Powered Flight," in Jacob Neufeld, George M. Watson, Jr., and David Chenoweth, eds. *Technology and the Air Force: A Retrospective Assessment* (Washington D.C.: Air Force History and Museums Program, 1997), 193.

was the Shrike. The Shrike was a high-speed, anti-radiation missile that was designed in 1958 as a passive receiver attached to a missile body, which would kill radar-emitting antenna. The radars sought for destruction were used for air defense systems that could track US aircraft and shoot SAMs. The Air Force's Wild Weasel aircraft (F-100 and F-105) employed the Shrike during Vietnam.

By 1959, specialists in the Navy's Weapons Planning Group produced a series of studies, which pointed out the growing need to produce non-nuclear munitions based on the perceived expectation that the United States would not employ nuclear weapons during a future conflict. The series also noted that current conventional weapons, not only within the Navy but throughout the entire defense establishment, were severely lacking in capability.<sup>154</sup> This study prompted another shift in emphasis, this time away from nuclear weapons. The Air Force would follow suit years later.<sup>155</sup> During this same time, Laser technologies emerged and would provide the necessary advancements in munitions guidance that would steer the development of the series of precision-guided munitions (PGM) that eventually matured into the lethal weapons employed in Linebacker I (1972) and DESERT STORM (1991). Unfortunately for the Air Force, the responsibility for bomb development would not be transferred from the Army to the USAF until the commencement of the Vietnam War.<sup>156</sup> At the onset of Vietnam, tactical airpower would rely predominantly upon general-purpose bombs and marginally effective Bullpups.

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<sup>154</sup> Frank Knemeyer headed the Navy's "Code 12" Weapons Planning Group and led the conventional weapons study series in 1959. Leroy Doig, Historian at the United States Naval Weapons Center at China Lake, California, interviewed by author, 20 February 2001.

<sup>155</sup> By 1964, Detachment 4 of the Research and Technology Division of the Air Force Systems Command reasoned that improvements to conventional air-to-ground munitions must be undertaken. Moreover then, the size of the conventional precision-guided weapons were not large enough to destroy or damage many of the targets that pilots were required to attack in Vietnam. Mets, *Quest*, 47-8.

Between Korea and Vietnam, the Air Force focused primarily on nuclear weapons and did not undertake any significant improvements to tactical conventional bombs. Moreover, the Air Force did not ask for more conventional bombs to be produced by the Army Ordnance Division. It is not surprising then, that the Air Force had shortage of conventional general-purpose bombs the first two years of the Vietnam War. This fact meant that several combat sorties flew “with less-than-full bombs loads and less-than-optimum kinds of weapons.”<sup>157</sup>

### **Conventional Air-to-Air Munitions**

Conventional air-to-air weapons, on the other hand, fared slightly better in the Air Force during the 1950s than air-to-ground munitions. During the Korean War, the only air-to-air weapons available were the 50-caliber machine gun and 2.75-inch folding fin rockets. Following the war, developments in both the gun and missiles occurred within the Air Force and Navy. During the Korean War and immediately following, the Air Force examined the 20mm as a replacement for 50-caliber machine guns. The M-39 20mm machine gun evolved out of this study. The M-39 was capable of rates of fire greater than that of the older .50-caliber guns. This meant that the 20mm could shoot more rounds per second at an enemy (with a muzzle velocity of 2,850 feet per second). Although employed by the F-86 and F-100, the M-39 was only an incremental advancement in air-to-air capability.<sup>158</sup>

General Electric’s Vulcan M-61 20mm Gatling gun, however, represented a significant increase in aerial cannons and aerial combat capability. The Air Force’s M-61

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<sup>156</sup> Ibid., 47.

<sup>157</sup> Mets, *Orphans*, 32 – 33.

six-barrel, hydraulically and electrically rotating, electrically firing cannon was capable of firing 6,000 rounds per minute with a muzzle velocity of 3,380 feet per second.<sup>159</sup> With both an increase in rate of fire and velocity of rounds fired, the M-61 was a dramatic improvement in aircraft machine guns. Moreover, the new Gatling gun had fewer sudden starts and stops when firing, which meant that the cannon was also more reliable. The F-104 and F-105 were the first aircraft designed to utilize this weapon. As mentioned earlier however, initial design problems resulted in the M-61 being removed from the F-104 until 1964. Even though other US fighters (air defenders such as the F-101, F-102 and the Navy's F-4) were not modified to carry this new gun, the M-61 would be modified, corrected, and then later used extensively during Vietnam. The Air Force also designed an external pod that could house the 20mm gun for use by aircraft that did not possess a gun. During Vietnam, the M-61 proved extremely viable as an air-to-air gun and is still in use today in the F-15, F-16, and F-22. During Operation LINEBACKER, the M-61 was credited with seven aerial victories, while the heat-seeking AIM-9 was credited with ten.<sup>160</sup>

Immediately following the Korean War, rockets continued to receive research and development emphasis within the Air Force. Various USAF organizations worked to develop the T2-14 2.0-inch folding-fin rocket. This concept was developed to shoot between 50 and 52 high-speed rockets in rapid succession at enemy aircraft.<sup>161</sup> The F-94 was the first to employ the T2-14. The US Navy also developed a pod to shoot a large

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<sup>158</sup> David R. Mets, *Checking Six is not Enough: The Evolution and Future of Air Superiority Armament* (Maxwell AFB, Ala: Air University Press, 1992), 18–19 (hereafter cited as Mets, *Checking Six*).

<sup>159</sup> Anderson, 170.

<sup>160</sup> Mets, *Checking Six*, 24.

<sup>161</sup> Leroy Doig, Historian at the United States Navy Ordnance Test Development Center at China Lake, California, interviewed by author, 20 February 2001.

number of 2.75-inch rockets. The Navy's Zuni was developed during the 1950s and incorporated by the Air Force for use.

Folding fin rocket pods were the precursor to air-to-air missiles. Rockets were unguided projectiles shot in large numbers in the hope of hitting the intended target (similar to a shotgun). Air-to-air missiles differed by the fact that they were guided either by a heat source or from commands from the shooter's radar. Missile research began in the 1940s. During the 1950s, the Air Force developed and procured the AIM-4 Falcon missile, both in the infrared and radar-guided versions. The Falcon was constructed in 1956 and remained in service for 25 years.<sup>162</sup> All versions of the Falcon were designed to shot down large, non-maneuvering Soviet bombers and as such proved marginally effective against smaller, highly maneuverable fighters. The AIM-4 would eventually be dropped from the Air Force's inventory for the more reliable Navy air-to-air missiles developed during the 1950s. The Air Force spent much of its research and development effort not advancing the Falcon, but producing nuclear-tipped air-to-air missiles. Genie was the product of extensive USAF work for air defenders such as the F-102. The MB-1 Genie became operational in 1957.<sup>163</sup>

The Navy's Ordnance Test Center at China Lake developed two different air-to-air missiles that would evolve and are still employed by fighters today. The first missile was the GAR-8, later re-designated the AIM-9 Sidewinder IR heat-seeking missile. This Mach 2.5 missile relied on the heat generated from exhaust of an enemy jet for

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<sup>162</sup> Mets, *Checking Six*, 17.

<sup>163</sup> Department of Defense, "Semiannual Report of the Secretary of the Air Force" in *The Semiannual Report of the Secretary of Defense: Jan – Jun 1957* (Washington D.C.: United States Government Printing Office, 1958), 298.

guidance.<sup>164</sup> Early versions had to be fired from an aft position in order for the seeker to “see” its target.<sup>165</sup> The Air Force adopted the Navy’s missile into several of its fighters. The first aerial victory attributed to the AIM-9 occurred in 1958 by a Chinese Nationalist F-86 against a Chinese Communist aircraft. During the Vietnam War, the AIM-9 achieved marginal success largely due to inexperienced pilots not understanding the requirement to maneuver into the correct firing position. Moreover, the lethal employment “cone” behind the enemy was constantly changing as a result of aerial maneuvers, which further decreased AIM-9 shot opportunities. The AIM-9 only had an effectiveness rate of 14% during Vietnam. Other limitations included problems with missiles guiding on the sun, reflections on clouds, and being easily decoyed by enemy flares.<sup>166</sup>

The Second Navy air-to-air missile developed during the 1950s and later bought by the Air Force was the AIM-7 Sparrow radar guided missile.<sup>167</sup> Research and development began in 1946 and the missile entered service in 1956.<sup>168</sup> The Sparrow was considerably larger and more expensive than the Sidewinder. The added size was due partially to the solid rocket motor, which would burn longer providing greater range shots than the AIM-9. The Air Force did not integrate this missile into its inventories until the 1960s after it received the McDonnell Douglas F-4 Phantom. Similarly to the AIM-9, the

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<sup>164</sup> Anderson, 174.

<sup>165</sup> The Sidewinder was modified extensively by the Navy to be used on ships and surface equipment. One version was even modified to carry a small nuclear warhead. Leroy Doig, Historian at the United States Navy Ordnance Test Development Center at China Lake, California, interviewed by author, 20 February 2001.

<sup>166</sup> Mets, *Checking Six*, 17 – 8.

<sup>167</sup> Similar to the AIM-9, the Navy developed several different variants of the Sparrow to be employed by more than just aircraft. The AMI-7 was also employed on several ships as part of its air defense systems. US Navy, “Guided Missiles of the Department of the Navy,” March 1958, located at the United States Air Force Historical Research Agency, call number K180.23551.

<sup>168</sup> Mets, *Checking Six*, 18.

Sparrow was employed with marginal effectiveness due to unfamiliarity with employment requirements and missile limitations. During Vietnam, the Sparrow achieved the most kills, but was limited by the rules of engagement that required the pilots to visually identify the target before employing the missile. This resulted in US fighters having to maneuver to the stern of the adversary, thus negating the Sparrow's increased range capability. All three missiles (Falcon, Sidewinder, and Sparrow) were shot from an aft position during the Vietnam War and therefore did not represent a revolutionary increase in air-to-air employment doctrine over Korea tactics.<sup>169</sup>

From a Model II point of view however, air-to-air developments within the Air Force represented substantial advancements for tactical conventional airpower. During the 1950s, standard operating procedures were established to ensure air-to-air missiles continued to be both further evolved for and also adopted into fighter aircraft designs. Although the missiles possessed weaknesses, the foundation was set during the 1950s that provided for the highest level of air-to-air weapons capabilities—equal to or greater than any other country in the world. Similar to air-to-ground weapons developments, air-to-air munitions had design specifications that compromised employment capabilities in a conventional war. Nevertheless, USAF air-to-air weapons developments contributed to increasing tactical conventional airpower that ultimately led to the success rate witnessed during DESERT STORM.

### **Tactical Airpower Training**

Despite the mixed results of the development of tactical air-to-ground and air-to-air munitions during the 1950s, the Air Force, and more specifically, Tactical Air

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<sup>169</sup> Ibid., 24.



Command's greatest contribution to the advancement of tactical airpower came in the form of training. Established procedure within TAC mandated that periodic training be accomplished to further the efficiency of its various units. Between Korea and Vietnam, TAC instigated a plethora of exercises to improve the employment skill of its aircrews and to advance operations with its sister services. These exercises were also designed to advance tactical airpower concepts and effectiveness of weapons system platforms. Along with the Composite Air Strike Force (CASF) already mentioned, TAC participated in European rotation plans, joint tactical exercises, and advanced tactical airpower training.

With the advent of CASF came the concept of rotating tactical airpower units from the United States to Europe where many of the tactical airpower units were envisioned to operate if war ever broke out with the Soviet Union. In 1954, TAC sent the 389<sup>th</sup> Fighter Bomber Squadron to Toul-Rosiere Air Base in France as part of the first "ROT" (rotational duty).<sup>170</sup> These six-month ROTs were conceived to augment tactical airpower already in Europe. By July 1960, 110 ROTs had been conducted.<sup>171</sup> ROTs and CASF deployments to other countries around the world were also designed to "show the US flag" and prepare USAF squadrons for quick deployments to any place in the world. Within eight hours of notification, a CASF could be sent anywhere. As a results of the ROTs and the CASF experiences, TAC was able to successfully deploy airpower to Lebanon (Operation Double Trouble) in July 1957 and Formosa (Operation Mobile Zebra in November and December 1957).<sup>172</sup> Although US airpower was not employed in

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<sup>170</sup> Leverett G. Richards, *TAC: The History of Tactical Air Command* (New York: The John Day Company, 1961), 35.

<sup>171</sup> *Ibid.*, 36.

<sup>172</sup> *Ibid.*, 160 – 80.

combat, in each case, tactical airpower's presence was credited with quelling the conflict with communist forces.

In addition to deploying to various hot spots around the world, tactical units participated in several joint and combined exercises all around the world. The first major joint Air Force/Army Air-Ground tactical exercise after Korea occurred in the fall of 1955 and was called Operation *Sage Brush*. General Weyland was the *Sage Brush* coordinating official for TAC. *Sage Brush* was the first and only large-scale test of tactical nuclear war tactics and included the most realistic conditions possible short of war.<sup>173</sup> The exercise included 30,000 airmen, 850 aircraft, tactical missiles, and 110,000 Army troops spread over seven southern states.<sup>174</sup> The principal lesson learned from this tactical nuclear exercise was that whoever launched the first tactical nuclear weapon ultimately destroyed the adversary's tactical airpower. Even if a nation possessed a second-strike capability, there would irreparable destruction of tactical forces and the situation would inevitably escalate into a general nuclear holocaust.<sup>175</sup> Following *Sage Brush*, all tactical exercises were conducted with non-nuclear weapons.

Tactical Air Command continued to engage in numerous operational exercises, both singly and jointly with Army and Navy forces. By 1961, TAC had participated in operations such as Jack High, Cross Feed, Flash Back, Bright Star, Pine Cone I/II/III, Solidarity, and Long Pass.<sup>176</sup> These exercises highlighted both strong and weak points of tactical airpower. From the lessons learned, tactical units would return home to improve

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<sup>173</sup> Rand Corporation Study of "Operation *Sage Brush*," February 1956, located at the United States Air Force Historical Research Agency, call number K146.003-201.

<sup>174</sup> Richards, 230 – 1.

<sup>175</sup> Rand Corporation Study of "Operation *Sage Brush*," February 1956, located at the United States Air Force Historical Research Agency, call number K146.003-201; Richards, 231.

on weak areas and perfect strengths. Tactical airpower improved its ability to employ the current weapons systems. Additionally, areas for improvements between the services were highlighted. One reoccurring problem that was highlighted was close air support for the Army. Since Korea, inter-service rivalries continued to plague tactical airpower. To relieve this alleged lack of support to the Army, the Air Force offered to devote ten to fifteen of its tactical airpower squadrons scheduled for deactivation to the Army and the CAS mission.<sup>177</sup> Both services' Chief of Staff agreed to the proposal and forwarded it to the Chairman of the JCS in 1961. Moreover, from the CAS lessons learned, improvements to the Air Force's Air-Ground Operations School (AGOS) in Florida and TAC Manual for "Joint Air-Ground Operations (TACM 55-3) were made during the late 1950s.<sup>178</sup> In the first four years of AGOS, the Air Force graduated 15,000 airmen who were trained to support ground forces in the mission of close air support.

Following World War Two, the Air Force constructed a small school to pass on fighter experience to younger pilots. The informal transfer of knowledge grew to become the USAF Fighter Gunnery School at Nellis AFB, Nevada. After Korea, in 1954 the school was renamed the USAF Fighter Weapons School.<sup>179</sup> The Weapons School's primary mission was to train instructors in aerial gunnery. During the 1950s, the F-51, F-80, F-84, and F-100 were the primary fighter aircraft used for instruction. In 1957, another gunnery school opened in Phoenix, Arizona: the 3525<sup>th</sup> Combat Crew Training

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<sup>176</sup> Department of Defense, "Annual Report of the Secretary of the Air Force" in *The Annual Report of the Secretary of Defense: Fiscal Year 1961* (Washington D.C.: United States Government Printing Office, 1962), 294 – 5.

<sup>177</sup> Ibid., 293.

<sup>178</sup> TAC's manual for CAS operations detailed instructions for employment with ground units. Headquarters Tactical Air Command Manual TACM 55-3, *Joint Air-Ground Operations*, 1 September 1957, located at the United States Air Force Historical Research Agency, call number K417.549-3.

<sup>179</sup> "History of the USAF Weapons School," n.p.; on-line, Internet, 22 November 2000, available at <http://www.nellis.af.mil/usafws/wshistory.htm>.

Wing. This school also trained instructors, but now in the F-86F.<sup>180</sup> During the Eisenhower Administration, both schools primarily focused on advancing tactical airpower missions, although some tactical nuclear instruction emerged late in the 1950s.

To further educate the tactical airpower units through the United States Air Force, the Fighter Weapons School produced a classified newsletter entitled *Fighter Gunnery Newsletter*. Begun in 1951 as an effort to highlight lessons from Korea, the newsletter grew to include up-to-date information on procedures, tactics, weapons, and more.<sup>181</sup> Written by both students and instructors, the newsletter was the primary source for line units to receive the latest information on tactical airpower. Lastly, the *Fighter Gunnery Newsletter* provided a forum for new ideas by writers throughout the Air Force. It has grown substantially and it still in print under a new name.

Tactical Air Command's efforts to train its aircrews appears to have been impressive. Although much was be done to quickly deploy tactical combat airpower anywhere in the world, the tactical training provided through exercises and the Weapons Schools were primarily programmed to prepare for a large war in Europe against the Soviet Union. Given that the Air Force's position was that another Korea was unlikely, very little was accomplished with respect to preparation for *limited* combat in other environments or locations. Many of the established procedures for the application of tactical combat airpower would transfer directly to the Vietnam conflict, but inexperienced aircrews were not prepared for combat in Southeast Asia. Only the veterans from Korea were moderately prepared to handle their initial sorties into North Vietnam. By 1965, most

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<sup>180</sup> History, 3525<sup>th</sup> Combat Crew Wing, 1 Jan – 30 Jun 1957, located at the United States Air Force Historical Research Agency, call number K289.80-35.

<sup>181</sup> "History of the USAF Weapons School," n.p.; on-line, Internet, 22 November 2000, available at <http://www.nellis.af.mil/usafws/wshistory.htm>.

Korean War veterans were either retired or too senior to be serving full time in fighter cockpits. Aircrew training, one of the Air Force's strongest qualities during the Korean War, suffered during the latter half of the 1950s.

The low-level tactics developed for Europe would prove impractical in Vietnam. More than 80 percent of all US aircraft shot down during the war were engaged below 3,000 feet.<sup>182</sup> Furthermore, tactics had not yet been developed to counter the growing SAM threat. The shoot-down in the spring of 1960 over the Soviet Union of Francis Gary Powers in a U-2 spy plane caused great consternation for the United States. Electronic warfare research and development organizations worked to counter this new threat with anything other than low-level attacks. The hope was that low-level attacks would reduce the detection ranges and time for attack of the SAMs. It would not be until after the Vietnam War that the USAF would follow the Navy's lead in developing a large-force training exercise that was designed primarily to prepare aircrews for the robust combat environments expected against a formidable air defense system.

### **Was Tactical Airpower Impeded? – A Model II Answer**

For the Air Force, several organizations had varying input to the decision-making process regarding the development and improvement of conventional tactical combat airpower. Senior-level guidance originated from the Air Force Council, which received recommendations from many units. Organizations such as the Air Staff, the Aircraft and Weapons Board, TAC, NACA, and the ARDC provided suggestions that influenced the Air Force Council. Although the national security policy of Massive Retaliation had an inordinate influence on the directions of the Air Force Council during the 1950s, lower-

level organizations still possessed standard operating procedures that positively (albeit in limited ways) impacted conventional tactical airpower. In spite of the strategic emphasis within the Air Force, standard operating procedures steered several organizations to continue managing conventional tactical airpower issues in beneficial ways. The contributions of TAC and General Weyland significantly improved tactical airpower's capability to deploy forces to locations spanning the globe. As an advocate for addressing the possibility of brush-fire wars, Weyland compelled the Air Force and several organizations to consider how their programs dealt with the spectrum of conflict below nuclear war.

For tactical aircraft development and procurement, a Model II analysis reveals that the plethora of agencies involved tended to *satisfice* their search for solutions. Although standard operating procedures existed to ensure conventional weapons were incorporated into fighter designs, those designs compromised the fighters' capability to employ in Korean War-type of conflicts. The aircraft designs for fighters of the 1950s were largely created for delivery of tactical nuclear munitions. The F-100 and the F-104 were exceptions to this statement, but both of these fighters were later modified to carry nuclear weapons. With the emphasis on nuclear war, tactical nuclear airpower grew in importance, but at the cost of decreased capability to deliver non-nuclear ordnance. Aircraft such as the F-101 and the F-104 would see little use in Vietnam except in reconnaissance or alert air defense missions. Of the aircraft that could drop conventional bombs, only a handful were properly configured to employ Bullpup or other "guided" munitions. Vast majorities of the aircraft were relegated to delivering general-purpose bombs and in less than full loads. None of the fighters designed during the period in

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<sup>182</sup> Lambeth, 18.

question was developed to be a formidable and agile dogfighting platform that could contend with the aerial fights witnessed during Korea or World War Two. It is tempting to speculate by way of a question: had the Air Force spent more on research and development for tactical airpower, could many of the deficiencies noted above been alleviated?

The fighters developed during the 1950s were intended to deliver tactical nuclear weapons or intercept nuclear bombers. The various organizational decisions regarding modifications for conventional war were at best marginal. Combat performance during the Vietnam War demonstrated that despite political restrictions imposed by the NCA during that conflict, when tasked to attack a target, fighters such as the F-105 were highly susceptible to ground fire. If the Thud survived its attack, it often failed to destroy its target because of a lack of capability to deliver guided bombs or an insufficient supply of general-purpose bombs. Although the Air Force produced several tactical aircraft capable of dropping conventional munitions between the Korea and Vietnam Wars, none can be considered as substantial improvements to conventional tactical combat airpower. Not until the Air Force purchased the Navy-designed F-4, did the USAF possess a fighter that could deliver all types of bomb loads and successfully engage in air-to-air combat.<sup>183</sup> Additionally, the creative initiatives within the Air Force during the early 1960s led to the development of the AC-47 and AC-130 Gunships, which proved extremely viable combat platforms during Vietnam. It is unfortunate, but not difficult to understand why innovations such as the gunship did not evolve earlier than they did. Had the Air Force embraced Flexible Response earlier, one could only speculate on how much further

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<sup>183</sup> The USAF F-4C and F-4D did not have guns and were bigger and smokier than the MiG-21.

tactical airpower could have advanced in order to reduce losses during the initial months of the air war in Vietnam.

A Model II examination of conventional air-to-ground munitions development during the 1950s reveals that the Air Force compromised its conventional munitions due to the relatively new advancement of nuclear weapons. During the 1950s, nuclear weapons and ICBM developments consumed a large amount of money and design expertise, which virtually eliminated the resources devoted to tactical conventional munitions. Even though TAC and General Weyland foresaw the brush-fire war, they were content with the knowledge that conventional munitions existed with an adequate capability. More importantly, from an organization's health perspective, TAC saw the procurement of tactical nuclear munitions as necessary to its survival. Only after TAC was secure in the knowledge that it would not fold under the weight of SAC, could non-nuclear weapons program improvements be considered. Unfortunately, most of the lower-level Air Force organizations also shifted their efforts to nuclear programs. Furthermore, it would not be until the early 1960s that the Air Force would gain control of conventional bomb development. Allowing the Army Ordnance Division that mission was an easy way to factor USAF efforts and funding in order to focus the Air Force's attention on nuclear weapons. Had the Air Force embraced flexible response sooner, it is likely that conventional munitions development and procurement would have increased in time to impact Air Force performance during the opening air operations of the Vietnam War.

Air-to-air weapons development within the Air Force fared much better than other aspects of tactical airpower development, although still not as well air-to-air weapons



development in the Navy. The advancement of the AIM-4 Falcon and the Vulcan M-61 20mm cannon were significant milestones for aerial armament developments within the Air Force. Similarly, the acceptance of the Navy's AIM-9 Sidewinder (and later the AIM-7 Sparrow) for USAF fighters provided a significant air-to-air capability. Although all the missiles were designed to be employed against non-maneuvering bombers, continued testing and modifications during the 1950s led to advanced missiles that surpassed anything the Soviets had produced. Most importantly, standard operating procedures were in place to provide for further developments in air-to-air weapons development. The principal hurdle for advancements in DoD air-to-air weapons development was the reoccurring adversarial relationship between the Navy and the Air Force, which tended to be a struggle for power and primacy.<sup>184</sup>

The standing requirement within each service to accomplish periodic training resulted in improvements for USAF tactical airpower. Through the CASF, ROTs to Europe, and many annual joint and combined exercises, tactical airpower was able to practice deploying and employing in realistic scenarios. Although much emphasis in nuclear weapons steered tactical airpower training, much of the training transferred to the employment of conventional weapons. The level of detail in planning missions, the low level bombing runs, the protection from enemy fighters, air refueling, and tactical reconnaissance are all similar in tactical conventional or nuclear missions. The fact that the Air Force continued to train vigorously between Korea and Vietnam, improved tactical airpower's ability to employ at the commencement of the Vietnam War.

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<sup>184</sup> Leroy Doig, Historian at the United States Naval Weapons Center at China Lake, California, interviewed by author, 20 February 2001.

From a Model II framework, several organizational efforts continued to advance tactical conventional combat airpower during the 1950s. Advancements in fighter development and air-to-ground munitions were only marginally effective. Conversely, improvements in air-to-air weapons and a continual training throughout the 1950s substantially advanced tactical combat airpower. The mixed results of this Model II analysis demonstrates that despite the emphasis on strategic missions and nuclear weapons, the Air Force did not entirely neglect tactical conventional airpower. The greatest advancements in tactical airpower within the USAF were a result of ongoing routines and operating procedures. Factoring of the Air Force's decision-making problems resulted in the preservation of USAF tactical conventional airpower during the time of nuclear plenty. A further examination of the individual-level decision-making process within the Air Force will complete the understanding regarding whether and to what extent the USAF neglected tactical airpower between Korea and Vietnam.

## Chapter 5

### **Model III Analysis: Air Force Leadership Decision-Making**

In the previous two chapters, I have elaborated on how analyses at the systemic and organizational levels produced different conclusions in relation to USAF tactical conventional airpower decision-making. This final level of examination will focus at the individual level of decision-making. Within every organization, individuals influence programs and ultimately make decisions. Various individuals, both inside and outside the Air Force, made decisions that affected conventional tactical airpower during the 1950s. Although their influence and decisions were affected by systemic and organizational factors, those factors can only explain a part of their motivation.

At the highest level, the responsibility for approving and implementing the United States' National Security Policy fell to the President. From 1953 to 1961, President Eisenhower was assisted in his decisions by two advisory bodies: the National Security Council (NSC) and the Joint Chiefs of Staff (JCS).<sup>185</sup> Throughout this period (and since), readiness was at the forefront of the United States military's agenda. The United States Air Force Chief of Staff (as with the other service chiefs) was expected to provide advice

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<sup>185</sup> The NSC consisted during the 1950s of the President, Vice President, the Secretaries of State, Defense, and Treasury, the Directors of the Office of Civil and Defense Mobilization and the Bureau of the Budget. The Chairman of the JCS is normally the only military member to attend NSC meetings. The JCS is comprised of a Chairman, and the Chiefs of Staff of each respective Service. Maxwell D. Taylor, General, US Army, *The Uncertain Trumpet* (New York: Harper and Brothers, Publishers, 1959), 80.

on readiness and security-related issues based primarily on his experience and knowledge and not based on Air Force parochialism. Unfortunately, this was not always the case.

Between Korea and Vietnam, the USAF Chief of Staff and other senior Air Force leaders presented advice to both the President and Congress that may not have been in the best interest of the Air Force and the United States in general. Advice given and decisions made by Air Force leaders during the 1950s tended to be more a result of bureaucratic competition and personal motivations than pure military advice without parochial biases. Using Allison's Model III decision-making construct, I will show how various leaders within the Air Force influenced and directed USAF policy, which directly affected development and procurement decisions for tactical conventional airpower during the period in question. I will begin this chapter with an overview of Allison's third decision-making model. Then using a Model III framework, I will expand upon how the various individuals in key positions within the Air Force influenced tactical conventional airpower. Finally, I will summarize the observations and provide a Model III analysis of Air Force decision-making as it pertained to tactical conventional airpower.

### **Model III Decision-Making**

Graham T. Allison's third decision-making model is based on the premise that governmental decisions are made by individuals in key positions who view the nation's problems from varying perspectives and backgrounds. These individuals possess extensive and distinct responsibilities and are obliged to fight for what they believe is right. Often, bureaucratic infighting results in decisions that may be vastly different from what any person or organization intended. The moves in this *chess game* are a

consequence not of rational choice or organizational routines, but rather of “the power and skill of proponents and opponents of the action in question.”<sup>186</sup> Allison states that the actions and decisions of government are “intranational political resultants” and further explains that the decisions are:

*resultants* in the sense that what happens is not chosen as a solution to a problem but rather results from compromise, conflict, and confusion of officials with diverse interests and unequal influences; *political* in the sense that the activity from which decisions and actions emerge is best characterized as bargaining along regular channels among individual members of government.<sup>187</sup> (emphasis in original)

To completely comprehend this paradigm, Allison offers four questions that must first be answered: Who plays? What determines each player’s stand? What determines each player’s relative influence? How does the game combine players’ stands, influence, and moves to yield governmental decisions and actions?

### **Who Plays?**

The players in a Model III paradigm are neither a unitary actor nor a group of organizations. The Model III framework states that individuals (people in key jobs) are the players in the national security game.<sup>188</sup> These individuals include the *Chiefs*, (the President, the Secretaries of State, Defense, and Treasury, and the Joint Chiefs of Staff); *Staffers* (the Chiefs’ immediate staffs); *Indians* (the political appointees and permanent government officials within each organization); and *Ad Hoc Players* (actors in the wider governmental game such as Congressmen, members of the press, and spokesmen for interest groups).<sup>189</sup> Each player is defined by his position or job. The job, in turn, has

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<sup>186</sup> Graham T. Allison, *The Essence of Decision: Explaining the Cuban Missile Crisis* (New York: Harper Collins Publishing, 1971), 145.

<sup>187</sup> Ibid., 162.

<sup>188</sup> Ibid., 164.

<sup>189</sup> Ibid.

certain advantages and restrictions that influence what the individual may and must do to fulfill his duties.

### **What Determines Each Player's Stand?**

Several factors influence where an individual player stands in relation to an issue that must be decided upon. The first factor is parochialism (narrow or restricted in scope). Parochialism can be good or bad depending on how organizational prejudices affect decision-making. Key individuals within each organization must be sensitive to the organization's orientation, but not so sensitive that vital decisions adversely affect the unit overall.<sup>190</sup> The organization's orientation leads to parochial priorities and perceptions that bias how the individual approaches possible problems and decisions. By understanding a person's position, one may better explain how or why that person decides the way he does. The second factor that affects decision-making is the individual's goals and interests. The goals and interests an individual may have include national security, organizational, domestic, and personal concerns. Each concern will have varying levels of emphasis and therefore weigh on the individual differently. The third factor that influences individual decision-making is stakes and stands. From the goals and interests, an individual will evaluate how each goal and interest overlaps and determines what is at stake with respect to a particular issue. Once the stakes are established, then the individual will determine what his stand should be. The fourth factor is deadlines and faces of the issues. Oftentimes, solutions to problems are not found through detailed analysis, but rather may be forced upon the individual as a result

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<sup>190</sup> Ibid., 166.

of a deadline. Additionally, the forum in which the issue was raised may impact how the individual decides a solution within a given deadline.<sup>191</sup>

### **What Determines Each Player's Impact or Result?**

Power is the primary way individuals influence a decision or policy. Allison defines power as effective influence on government decisions and actions and consists of “an elusive blend of at least three elements: bargaining advantages, skill and will in using bargaining advantages, and other players’ perceptions of the first two.”<sup>192</sup> The advantages may be derived from formal authority and job responsibilities; aptitude and control of information that define the problem, identify options, and estimate feasibility; control of how decision may be implemented; the ability to be persuasive (personal charisma); and access to and persuasiveness with other players who have bargaining advantages listed above.<sup>193</sup> Over time, if power is wisely used, then a reputation for effectiveness is gained. Additionally, individuals tend to pick the issues which can be successfully influenced and avoid those which cannot in order to maintain a positive reputation. A positive reputation translates to increased power and a negative reputation does not.

### **What is the Game?**

How are the individual’s stands, influence, and moves linked to produce governmental decisions? Games that require individuals to bargain and compromise are neither random nor unintentional. The people with the stands and decisions of most influence, are the individuals whose positions link them to “action-channels” (a

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<sup>191</sup> Ibid., 168.

<sup>192</sup> Ibid.

regularized means of taking governmental action on a specific kind of issue).<sup>194</sup> In the Air Force, the Chief of Staff and the commanders of the major organizations are some of the individuals with the greatest influence due to the fact that they have the final say in decision-making. Action-channels shape the game by determining who the major players are and how they will participate. Advantages and disadvantages based upon job position will vary the potential influence each individual may have on the decision. Typically, action is taken within established channels.

The Constitution, laws, regulations, and even culture govern the rules of the game. Some rules are restrictive, while others are lenient. In either case, the rules define positions within the game and the manner in which individuals gain access to it. Likewise, the rules “constrict the range of governmental decisions and actions that are acceptable.”<sup>195</sup> Governmental decisions arise not from simple choice of a unified group, or as result of a commander’s predilection. Rather, decisions are made in light of shared power and separate judgements. “Each player pulls and hauls with the power at his discretion for outcomes that will advance his conception of national, organizational, group, and personal interests.”<sup>196</sup>

Model III’s explanatory power stems from the ability to define the game by the key positions, the individuals concerned, the action-channel used, and the pulling and hauling (jockeying for power) involved to make the decision. The dynamic variable of human interaction by key individuals constitutes the third level of analysis that completes this examination of governmental decision-making.

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<sup>193</sup> Ibid., 169.

<sup>194</sup> Ibid.

<sup>195</sup> Ibid., 170.

<sup>196</sup> Ibid., 171.



### **Tactical Conventional Airpower Model III Decision-Making During the New Look**

In July 1953, President Eisenhower directed the members of the Joint Chiefs of Staff to meet with top civilian and military officials. Their mandate was to “make a completely new, fresh survey of our military capabilities, in the light of our global commitments.”<sup>197</sup> At a meeting on 24 July, Secretary of Defense Charles E. Wilson indicated to the group his confidence in nuclear weapons to deter any nation from attacking the United States. This was a general feeling throughout the defense community. The Chairman of the Joint Chiefs of Staff, Admiral Arthur W. Radford subsequently asked the National Security Council for guidance as to the nature of war that the United States was likely to fight in the near future. He added that the preparations to contend with “every kind of war would be unnecessarily costly and that no mobilization planning would be realistic or useful unless it was founded on a proper strategic outlook.”<sup>198</sup>

In response to the Chairman’s request, the NSC issued direction in the form of a paper designated NSC-162. This paper indicated that the Soviet Union was the primary threat and nuclear weapons delivered by strategic airpower should provide for America’s first (and last) line of defense. Furthermore, NSC-162 recommended that the JCS should be authorized to use these new weapons when and where feasible.<sup>199</sup> President Eisenhower approved the paper and envisioned a defense establishment that could meet a “twofold requirement—preparedness for the essential initial tasks in case a general war should be forced upon us, and maintenance of the capability to cope with lesser hostile

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<sup>197</sup> As quoted in Futrell, *Ideas*, 424.

<sup>198</sup> *Ibid.*, 425.

<sup>199</sup> *Ibid.*

actions—and aimed to satisfy this requirement with less drain on our manpower and financial resources.”<sup>200</sup>

The Chairman established an ad hoc committee led by Air Force Lt Gen Frank F. Everest to make recommendations to the Joint Staff on force structure. The committee included senior representatives from each service. Each service was not only to construct their respective force structure recommendations, but was to comment on the other services’ plan. The Air Force’s plan was already arranged. Earlier in July of 1953, Air Force Chief of Staff Nathan Twining reported to Congress that the USAF was seeking a force structure goal of 143 wings.<sup>201</sup> The Everest Committee, however, recommended that a 127-wing goal be set for the upcoming budget plan (fiscal year 1956) and a 136-wing goal be established by the end of fiscal year 1957. These reduced goals were in part due to the expected high costs of nuclear weapons and other service force structure requests.<sup>202</sup> The committee could not agree to an overall force structure strategy and subsequently presented four different views to the Joint Staff.

The action channel in this decision framework flowed from the President down to the JCS, who in turn requested guidance from the NSC. After receiving NSC direction (with presidential approval), the action-channel flowed down to an ad hoc committee. Furthermore, when the military service chiefs briefed Congress (who controlled the purse strings), another group of individuals became involved. Every individual had his/her own

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<sup>200</sup> Department of Defense, *Semiannual Report of the Secretary of Defense, January to June 1954* (Washington D.C.: United States Government Printing Office, 1954), 6.

<sup>201</sup> Senate, *DoD Appropriation Hearing for 1954, Part 2* (Washington D.C.: United States Government Printing Office, 1954), 1890-94.

<sup>202</sup> The 137-wing goal was based on 7 heavy bomber, 28 medium bomber, 4 heavy reconnaissance, 5 medium reconnaissance, 2 fighter reconnaissance, and 8 strategic fighter wings in the strategic air forces; 34 fighter-interceptor wings in the air-defense forces; and 2 tactical bomber, 4 light bomber, 21 fighter-bomber, 6 day-fighter, 5 tactical reconnaissance, 4 heavy troop carrier, and 7 medium troop carrier wings in the tactical air forces. Futrell, *Ideas*, 426.

set of issues, of which military force structure was just one of the many issues that had to be considered. Additionally, each individual had different levels of power to influence the decision and alternative motives. The net result (which continues today) was a series of hauling and pulling (often called “logrolling”) in order to find a compromise for a final solution. The final force structure strategy would directly relate to the distribution of the DoD budget, which every chief was especially concerned with. The greater the share of the budget each chief received, the greater the power base he had.

During the 1950s, the actual budget process constituted a major action-channel that kept power within each service and not in a central agency such as the JCS. Every year, the Department of Defense programmed budgets and forecasted expenditures for the upcoming year. The Joint Chiefs of Staff as a body did not take part in the formulation of those budgets. Rather, the Secretary of Defense gave each service the responsibility to formulate its own budget, independent of the other services.<sup>203</sup> Although the JCS was expected to provide advice on budgetary matters to Congress, they were not directly part of the formulation process. The JCS did have a long-range planning tool, which was designed to provide overall guidance for the development of forces needed in the fiscal year beginning four years ahead. This tool was titled the Joint Strategic Objectives Plan (JSOP).<sup>204</sup> The JSOP, unfortunately, did not achieve its intended purpose during the 1950s. The primary reason for the failure was due to an “inability of the service Chiefs to agree on the best combination of forces supportable by the financial outlays, which the Secretary of Defense considered feasible for planning.”<sup>205</sup> Consequently, each service maintained the power to stipulate how its share of the budget was programmed for force

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<sup>203</sup> Maxwell D. Taylor, *The Uncertain Trumpet* (New York: Harper & Brothers, Publishers, 1959), 69.

<sup>204</sup> *Ibid.*, 85.

structure, which in turn gave the service chiefs enormous power—more so than the JCS. As the central coordinating body for national defense issues, the JCS did not coordinate the JSOP and budgetary issues.

The Joint Chiefs of Staff were also required to provide national military strategy guidance to the President, which would directly affect how the military should structure itself for war. NSC-162, which Admiral Radford had asked for, was based on the 1950 quintessential national security policy—NSC-68 (discussed in Chapter Two). A Model III examination of the development of NSC-68 reveals a process that was developed by only a few State and Defense individuals. According to Gerard Clarfield and William Wiecek, four individuals (Secretary of State Dean Acheson, Paul Nitze from State, General Truman Landon, and Major General James Burns from Defense) managed to create a policy (NSC-68) that built up the Soviet threat to be significantly more potent than actually existed.<sup>206</sup> Their policy also postulated that the intention of the Soviet Union was world domination and therefore the destruction of the United States. Furthermore, NSC-68 advocated the use of nuclear weapons to deter this “grotesquely oversimplified caricature of Soviet purposes.”<sup>207</sup> Moreover, the authors of NSC-68 were able to convince the chiefs of staff of the validity of this policy while bypassing the Secretary of Defense George Marshall, who Secretary Acheson knew was opposed to such a policy.<sup>208</sup> Acheson and the others were not interested in engaging in a discussion of the true nature of Soviet Communism. Rather, NSC-68 was solely intended to

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<sup>205</sup> Ibid., 86-7.

<sup>206</sup> According to the authors, Acheson and Nitze were the principal creators of NSC-68. Gerard H. Clarfield and William M. Wiecek, *Nuclear America: Military and Civilian Nuclear Power in the United States 1940 – 1980* (New York: Harper & Row, Publishers, 1980), 139 – 40.

<sup>207</sup> Ibid.

<sup>208</sup> Ibid., 137.

vindicate a rearmament policy that emphasized nuclear weapons. Consequently, the policy, which launched the New Look and NSC-162, was based on data contrived by a select few to advocate American political and nuclear supremacy.

Prior to the start of the Korean War, support among the chiefs of staff for NSC-68 began to fade, but the commencement of the war changed everything. Literally overnight, opposition for rearmament vanished and funding increased dramatically to contend with combat operations. With the Korean War came a reason to justify nuclear arms development. America was at war again and needed military strength. Despite the non-nuclear flavor of the Korean War, senior Air Force leaders were worried about general war. Throughout the Korean War, nuclear advocates looked to Europe and intimated that Korea was just a diversion—the Soviets were likely to start a general war in Europe at any time. Following the detonation of the Soviet's first nuclear bomb and the end of the Korean War, America was engrossed with speculation about Soviet intentions. Whatever the Soviet's true intentions were, the net result of the Korean War and NSC-68 (among other events) was the escalation of the Cold War.

In 1953, President Eisenhower asked the Joint Chiefs of Staff to provide advice not only on military issues, but also on a broad range of domestic and international issues. Senior Air Force leaders refrained from providing such advice and instead provided only professional military counsel that tended to favor Air Force interests.<sup>209</sup> The first of those interests was the continued buildup of the Air Force to the 143-wing goal within the constraints of budgetary and security policies. But, if the Air Force Chief of Staff was going to achieve this goal, he had to contend with the interservice rivalries to do so. Air

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<sup>209</sup> Mike Worden, Col, USAF, *Rise of the Fighter Generals: The Problem of Air Force Leadership 1945 – 1982* (Maxwell AFB, Ala: Air University Press, 1998), 67.

Force Vice-Chief of Staff from 1953 to 1957 (and later Chief of Staff 1957 – 1961) General Thomas D. White later recalled that “Strategic planning was not done well because of interservice rivalry.”<sup>210</sup> In fact, interservice rivalry at the Chief of Staff level was a significant hurdle not only for strategic planning within the Department of Defense during the 1950s, but also for providing unified advice to the National Security Council.

Since the advocacy of strategic bombing by Billy Mitchell prior to World War Two and the wartime direction of senior Air Force leaders during that war, strategic bombing was the principal method the Air Force used to employ airpower and validate its independence as a service. The New Look and the ascendancy of nuclear weapons were the catalysts for primacy of the Air Force within DoD. In fact, nuclear weapons rose to such importance within the Air Force that conventional weapons were at one time considered for elimination. At a senior Air Force planning meeting, the suggestion to cut conventional weapons entirely might have been implemented had it not been for General Weyland’s ability to deter such action.<sup>211</sup> Weyland’s ability to sway that group was based largely on his reputation as a respected war leader and his position as TAC commander. The fact that only one other individual in that meeting had wartime experience left the other members without a power base or reputation to draw upon in order to contest General Weyland’s authority.

Given the significance of the perceived threat from the Soviet Union, only nuclear weapons were financially prudent to deter and, if necessary, win a general war that

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<sup>210</sup>History, Interview with Gen. Thomas D. White on 27 June 1961 by Joseph W. Angell, Jr. and Alfred Goldberg, 1, located at the United States Air Force Historical Research Agency, Maxwell AFB, Ala, call number, K239.0512-606.

<sup>211</sup>History, Interview with Gen. O. P. Weyland by Dr. James C. Hasdorff and Brig Gen Noel F. Parrish on 19 November 1974, 255 – 6, located at the United States Air Force Historical Research Agency, Maxwell AFB, Ala, call number, K239.0512-813.

threatened America's survival in 1954. The perceived threat was so high during the 1950s that senior Air Force leaders stated that all efforts within the United States military should be devoted to ensuring the survival of America from Soviet aggression. SAC Commander General Curtis LeMay stated, "Offensive air power must now be aimed at preventing the launching of weapons of mass destruction against the United States or its Allies. This transcends all other considerations because the price of failure may be paid with national survival."<sup>212</sup> Most individuals in the Defense and State Departments did not disagree with the necessity of building a nuclear force to provide for US national security, but to focus solely on them at the exclusion of conventional forces was a matter of serious contention among senior US defense and policy-making members.

The issues that resulted in contentious debate at the highest levels of the military revolved around the likelihood of general war and whether or not nuclear weapons could deter both general and limited war. As for the potential for general war with the Soviet Union, NSC-68 and the New Look described the enormous (inflated) Soviet forces positioned in Eastern Europe and postulated the potential for an invasion there. No matter how inflated the intelligence reports were, the potential remained and as such had to be considered. Moreover, communist aggression in Korea, Lebanon, Formosa, Egypt (the Suez Canal Crisis in 1956), and Vietnam in the 1950s provided general war advocates with the impression that conflict on a massive scale was likely.

Those same hot spots indicated to the limited war advocates that general war was less likely. TAC Commander General Weyland, mirroring what many defense intellectuals argued—that the growing nuclear parity with Soviet Union “would

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<sup>212</sup> Gen Curtis E. LeMay, address to Major USAF Commanders' Conference, 28 – 30 June 1957, in *History, Strategic Air Command, July – December 1957*, vol. 2, chap. 1, doc. 2, located at the United States

neutralize the utility of general war” and “permit, indeed encourage, ‘brushfire’ or limited wars.”<sup>213</sup> US Army Chief of Staffs General Matthew B. Ridgway in 1954 and General Maxwell D. Taylor in 1956 both argued that limited war was more probable than general war. In 1954, General Ridgway postulated that Massive Retaliation might trap the United States into using nuclear weapons, if for no other reason than to prove that America was not bluffing. “Consequently, he concluded, the Soviets would attempt to fight a level below nuclear war.”<sup>214</sup> Similarly, General Taylor stated that the future would likely witness more conflict on the periphery and not a general war with the Soviet Union. Additionally, the fact that the United States threatened, but did not use nuclear weapons in Korea, Vietnam (in 1954), and Egypt indicated that political considerations might prevent both the use of nuclear weapons in limited conflicts and the escalation of those conflicts into general nuclear war.<sup>215</sup>

The US Navy leadership could envision either general or limited war as potential possibilities, but tended to favor limited war as a greater probability. In November 1953, Admiral Arleigh A. Burke (who would become Chief of Naval Operations in June 1955) intimated that the Defense Department needed a strategic concept for the “preparation for vast retaliatory and counteroffensive blows of global war and of the preparations for the more likely lesser military actions short of global war.”<sup>216</sup>

There is no reason to discount the assumption that each senior military individual believed in his view as to the proper strategic national security policy direction. Further analysis, however, reveals that each of the senior military members had different

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Air Force Historical Research Agency, Maxwell AFB, Ala.

<sup>213</sup> Futrell, *Ideas*, 448; Worden, 76.

<sup>214</sup> Worden, 74.

<sup>215</sup> Taylor, 23 – 6.



motivations and biases that led him to believe and advocate what he did. For the US Army, General Taylor discussed his motivations in his book, *Uncertain Trumpet*. Taylor mentioned his concern for proposed manning cuts for the Army in the fiscal year 1956 and 1957 budgets. Furthermore, in the mid-1950s, the Army had only minimal nuclear forces and was relegated to second string in the eyes of the Air Force, since the *next* war was likely to be general nuclear war.<sup>217</sup>

For the Navy, Admiral Burke's motivation can be understood by an increase in aircraft carriers and overall strength of the US Navy. Following the crisis in Formosa in 1954, where Navy carriers were sent to provide assistance, the Joints Chiefs of Staff decided to raise the number of aircraft carriers from 14 to 15.<sup>218</sup> Moreover, the Navy was attempting to procure forces that could support both general and limited war. Therefore, Admiral Burke may have presumably felt content to talk of both types of war since there was no threat to naval funding.

For the Air Force, Generals Twining and White's motivations may be grounded in their belief that air power was best employed against strategic targets and that nuclear weapons provided a realization that strategic airpower could have greater effects beyond any World War Two or Korean War airpower results. Furthermore, given the level of emphasis of strategic nuclear missions within DoD, the Air Force rose to the top of fiscal year funding (see chapter 3) and primacy with regards to employment in war plans. Repeatedly, SAC Commander General LeMay went before Congress to argue for greater funding for bombers and nuclear weapons and usually received what he asked for. For

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<sup>216</sup> As quoted in Futrell, *Ideas*, 448.

<sup>217</sup> Taylor, 48 – 55.

<sup>218</sup> Futrell, *Ideas*, 448.

three years (beginning in the Korean War), SAC grew and modernized to become the most destructive force in human history.

During the early and mid-1950s, General LeMay grew in stature and power both within the Air Force and throughout the JCS. His influence and reputation (given his World War Two reputation and accomplishments as SAC commander) allowed him to determine operational limits and strategy.<sup>219</sup> The net result for the Air Force was additional funding and prestige that insured its primacy among the other services would continue. Additionally, LeMay was convinced that Strategic Air Command's (and his own) growing power would not only deter general war with the Soviet Union (or any other state), but also deter aggression at levels of war lower than general war.<sup>220</sup> During the period in question, many military leaders were in the habit of making their arguments in print so that both political leaders and the public were aware of the issues. In 1956, General LeMay summed up his beliefs on deterring both general and limited war in an article. He stated:

Only a foolhardy nation would ever base its power strategy upon the doubtful assumption that what it started as a localized conflict would remain localized. The only condition under which this assumption could apply would be for one nation to be absolutely and positively guaranteed that the other lacked either resolution or intelligence. For if a nation is determined to survive and preserve its way of life, it must avoid risk of extinction, regardless of how that extinction might be brought about and if a nation is intelligent, it must realize that the objectives can be won just as surely in piecemeal advances and by one all-out blow. Therefore, combine both intelligence and resolution in as nation, and you have a nation against whom you dare not instigate limited actions unless you are ready to accept the possible consequences of all-out war.<sup>221</sup>

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<sup>219</sup> Walton S. Moody, *Building a Strategic Force* (Washington D.C.: Air Force History and Museums Program, 1996), 365; Worden, 79.

<sup>220</sup> General Curtis E. LeMay and Major General Dale O. Smith, *America Is In Danger* (New York: Funk and Wagnalls Publishing, 1968), 157; Futrell, *Ideas*, 464.

<sup>221</sup> Futrell, *Ideas*, 451.

In a book co-authored by General LeMay, he further elaborated:

It is my belief that our strategy and forces for limited war should not be separated from our over-all strategy and force structure. The artificial distinction of limited war forces for *this* war and general war forces for *that* war destroys the interacting strength of our military stance that will provide superiority and continued deterrence at any level of conflict.<sup>222</sup>  
(Emphasis in original)

Air Force Chief of Staff, General Twining echoed LeMay's opinions. Not only did he state that nuclear force could deter both levels of war, but he indicated that strategic nuclear forces could win both. In Twining's book, *Neither Liberty Nor Safety*, he wrote of how he thought nuclear war could be winnable.<sup>223</sup> He based his beliefs upon the concept that nuclear weapons could be delivered in time of war in limited quantities and yields. Twining considered the introduction of nuclear weapons as a controllable process. In 1957, General Twining was promoted to Chairman of the JCS, while Air Force Vice-Chief of Staff White was promoted to Chief. General White also favored the view of Generals Twining and LeMay. In an interview, White lamented on the importance of not taking away resources from the capability to wage general war in order to increase the Air Force's conventional war-making capability.<sup>224</sup> General White did not wish to see the Air Force's strategic nuclear bomber mission reduced at any cost.

When General White became Chief of Staff, he selected LeMay to be his vice. White understood how much power LeMay had with both the JCS and Congress and needed that influence to aid Air Force policy decisions.<sup>225</sup> Even after becoming Vice-

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<sup>222</sup> LeMay and Smith, 157.

<sup>223</sup> Nathan F. Twining, *Neither Liberty Nor Safety* (New York: Holt, Rinehart and Wilson, 1966), 112.

<sup>224</sup> History, Interview with Gen. Thomas D. White on 27 June 1961 by Joseph W. Angell, Jr. and Alfred Goldberg, 7, located at the United States Air Force Historical Research Agency, Maxwell AFB, Ala, call number, K239.0512-606.

<sup>225</sup> Worden, 81.

Chief of Staff, LeMay continued to promote SAC's mission. In a 1957 speech, LeMay told the major commanders that America "could no longer afford the luxury of devoting a substantial portion of our Air Force to support ground forces."<sup>226</sup> In fact, the new Vice-Chief was so enamored with the strategic nuclear mission that he mandated the vast preponderance of Air Force research and development funding be directed towards strategic airpower projects in order to further Strategic Air Command. Similarly, he promoted a far larger proportion of SAC officers to the rank of general over the officers of TAC (or any other command).<sup>227</sup>

General LeMay's influence reached as high as the Secretary of Defense (if not higher). Although required to advise his superiors, LeMay only recommended advancements to the strategic nuclear missions. That advice was mirrored in 1957 speech given by Secretary Wilson. Wilson stated that the free world had to rely upon the strength of its allies "not only to beat back any local aggression but to deter the aggressor from broadening the conflict into global war...the problem of deterring small wars cannot be considered separately from the problem of deterring war generally...the capability to deter large wars also serves to deter small wars."<sup>228</sup> Secretary Wilson fully endorsed LeMay views. From a Model III perspective, LeMay's influence on both the Air Force and the Department of Defense demonstrated just how powerful he was and what influence on decision-making he had. LeMay's personal and organizational biases and priorities influenced how decisions were made during the 1950s. Given that the stakes in the national security game were extremely high, LeMay, through the development and

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<sup>226</sup> Futrell, *Ideas*, 398.

<sup>227</sup> Worden, 81.

<sup>228</sup> House, *Department of Defense Appropriations for 1957, Hearings, 84<sup>th</sup> Congress* (Washington D.C.: United States Government Printing Office, 1957), 120 – 21.

procurement of nuclear weapons and their delivery systems, was placed within the key action-channel for airpower development. Moreover, LeMay possessed a strong personality and desire to use his position, which made him more influential.

### **The Effect of the Launch of Sputnik**

The Soviet's launch of Suptnik in 1957 was seen as an increased threat to America's survival. As mentioned in Chapter Two, the launching of Sputnik forced the United States to realize that the Soviets were ahead in rocket technology. The new Soviet technology meant that they had a capability to deliver a payload (e.g. nuclear warhead) to the United States without the military being able to defend against this threat or duplicate it. The result was an increase in effort of the US Space program to match the Soviets' progress. What transpired was the development of US rockets that could respond in kind to the Soviet missile threat. For the Air Force, its missiles became part of SAC. The necessary funding for missile development further advanced SAC over the other Air Force commands. Tactical airpower suffered as a result.

General LeMay was again influential in gaining additional funding for strategic missions. Not only did the Air Force reluctantly create an Intercontinental Ballistic Missile (ICBM) fleet, but also LeMay and his SAC successor (General Thomas Power) were able to increase the number of bombers procured during the later half of the 1950s. Despite the increased interest in ICBMs, LeMay and his generals were still unsure of the capabilities of the new missiles. In any event, Generals White and LeMay did place too much emphasis upon the fledgling ICBM force and as such continued to promote strategic bombers over any other weapon system.<sup>229</sup>

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<sup>229</sup> Worden, 84.

Senior Air Force leaders wanted the portions of airpower that were not associated with the strategic mission or that overlapping with it, to be either eliminated or reduced. In 1958, General Twining reported to Congress that the missions of SAC and TAC overlapped in some capabilities to deliver firepower. Senator Stuart Symington asked if TAC could be cut in the interests of the taxpayers. General Twining replied “We are cutting some. We cut several wings out this year, and it may go down further.”<sup>230</sup> Senior Air Force leaders favored one aspect of airpower (strategic bombers) to the detriment of others. To these Air Force leaders, tactical airpower did not contribute to their interpretation of contending with the perceived threat. In an effort to gain more power, LeMay went so far as to suggest that SAC absorb TAC. It is uncertain whether this suggestion would have contributed to the advancement of SAC (or the Air Force in general), but it is likely that TAC leaders viewed the suggestion as a threat to tactical airpower. Commenting on General LeMay, General Weyland stated:

Well, old Curt LeMay...He’s a pretty strong character in his own right. So he’s got this outfit shortly, and discovered to his pleasant surprise, perhaps, or perhaps not, that he had most of the chips. So he wasn’t satisfied with having most of them; he wanted all of them. I’m telling you, he worked like a beaver and was pretty successful in many areas. I was just fighting to preserve a force structure in the tactical air forces.<sup>231</sup>

Even within the Air Force, it is evident that conflict between the key decision-makers was present. Those with the greatest power had the largest influence. Despite the fact that all the key players mentioned above were four-star generals, they all did not carry the same weight or impact the decision-making process with the same effect. A

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<sup>230</sup> Senate, *Department of Defense Appropriations for 1958, Hearings, 84<sup>th</sup> Congress* (Washington D.C.: United States Government Printing Office, 1957), 341.

<sup>231</sup> History, Interview with Gen. O. P. Weyland by Dr. James C. Hasdorff and Brig Gen Noel F. Parrish on 19 November 1974, 100, located at the United States Air Force Historical Research Agency, Maxwell AFB, Ala, call number, K239.0512-813.

combination of personality, charisma, and position factored significantly into the decisions made regarding the direction the Air Force took with respect to airpower procurement policies and national security matters.

### **The Introduction of Flexible Response**

The concept of *flexible response* was first presented to the chiefs of staff at a joint conference in Puerto Rico in March 1956. It was at this meeting that Army Chief of Staff General Taylor first presented to the others the concept of flexible response. He posited how inflexible the current strategy of Massive Retaliation was because it focused solely on general nuclear war and did not realistically address limited, non-nuclear contingencies.<sup>232</sup> The other chiefs read Taylor's paper and politely disregarded it. The decision was made to continue with the status quo.

On 9 July 1956, the Chiefs met with then Chairman of the JCS, Admiral Radford to discuss the future procurement of each service's weapon systems. Once again, General Taylor offered his ideas on flexible response.<sup>233</sup> The other chiefs responded to his presentation with total silence. Even the Secretary of Defense did not offer a reply. Consequently, nothing occurred to change the service force structure or national strategy. Later that year Secretary Wilson presented to the services a plan to reduce the upcoming DoD budget. Two billion dollars and ten percent of the overall manpower level were to be cut by for the next fiscal year. This caused concern for each service chief.

The issue came to a head in a National Security Council meeting with the President in attendance on 25 July 1957. After a presentation of the overall trend in military manpower and spending, each service chief spoke of his plan for the near future. Once

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<sup>232</sup> Futrell, *Ideas*, 455.

again General Taylor proposed a change in national security strategy. He outlined the earlier threats and warnings that the Soviets had made concerning NATO issues related to Norway, Denmark, Greece, and Iceland. Taylor then elaborated on the increased likelihood of limited conflict with USSR. Given his views of the potential for limited conflict, the Army Chief recommended that each force be restructured to contend with both the possibility of general nuclear war and conflicts below nuclear war.<sup>234</sup> Each of the other service chiefs briefed their plans. At this meeting, no consensus could be reached and as such no decision was made. Consequently, the final product, due to a lack of consensus, was again the status quo.

General LeMay voiced his opinion on the subject of Massive Retaliation and superiority over the Soviet Union. He later wrote about his military philosophy and war-fighting doctrine during this time:

Of course, military superiority is itself subject to a great deal of judgement. How do we determine what superiority really means? We must first judge how a war is likely to be fought and, more important, how can we win that war. Then we can make valid judgements on superiority itself.

In this connection, I lean toward certain doctrines of warfare because my experience and study have taught me their validity. One such doctrine is that of the offensive. Victory far more often smiles on the side that attacks.

When the issue is joined there are five fighting doctrines I would suggest. First, take the war seriously. No business-as-usual attitude is worthy of a country willing to expend the lives of drafted young men. Second, fight to win as quickly as possible. Third, be as rough as necessary in order to win. Immaculate war is an impracticable dream. Fourth, be prepared to escalate to a general war. If not, stay out of limited war. A final overriding principle is that we must devote our major resources and

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<sup>233</sup> Taylor, 41.

<sup>234</sup> Ibid., 48 – 51.



attention to the most serious threat. To do otherwise is to gamble with our national and social existence.<sup>235</sup>

General LeMay believed he had America's best interests at heart, but his rationality was based on his parochial perceptions of both when the United States would engage in armed conflict and how nuclear weapons would be employed by the political masters. LeMay was correct to place the highest emphasis on survival of the nation and to take that job seriously. However, he could not envision America entering a conflict where there would be less than survival issues at stake for the United States and consequently, he could not comprehend a war where political leadership might have very little inclination to use nuclear weapons to resolve the conflict. By not advocating for forces other than strategic nuclear airpower, LeMay was gambling with those same young men he spoke of.

In October 1957, Secretary of State John F. Dulles wrote an article in *Foreign Affairs* that suggested the inadequacies of the policy he announced to the world only a few years earlier. In this article Dulles lamented about the inflexibility of Massive Retaliation. He then suggested that this policy was only suitable as a means of last resort. Finally, he posited "In the future it may thus be feasible to place less reliance upon deterrence of vast retaliatory power."<sup>236</sup> Dulles's words forced several key players to reevaluate their views regarding national security.

In February 1959, General Weyland spoke to the USAF Air War College on his views related to flexible response. He stated that he believed that total war represented the greatest danger to the United States, but that danger was extremely unlikely in his opinion. Rather, it was his opinion that limited war in areas of the world where the

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<sup>235</sup> LeMay and Smith, 313 – 14.

United States was least prepared was the most probable place where future conflict would arise.<sup>237</sup> Weyland went on to describe the flexibility of tactical airpower to contend with limited wars. Furthermore, he postulated that only tactical airpower could deter limited war and that the “forces of Strategic Air Command are dedicated to a single and inflexible purpose—the prosecution of an All-Out War. Their people and their equipment simply are not capable of or familiar with the many contingencies which arise short of that general conflict.”<sup>238</sup>

Despite General Weyland’s position, TAC forces diminished throughout 1958 and 1959. In a letter written to Chief of Staff General White, Weyland indicated that “we must continue to maintain a capability for the use of conventional weapons, thus rounding out our ability to deal with any contingency which might arise...”<sup>239</sup> Furthermore, Weyland dissented from a recent Air Force Cold War Conference and wrote to White that:

if he were willing to think solely as an Air Force officer he could not join a policy of replacing conventional weapons with nuclear weapons because it would make the Air Force job so much easier, but as an individual charged with upholding national policy Weyland could not accept a course of action that could eventually undermine national policy.<sup>240</sup>

At General Weyland’s retirement ceremony in 1959, he stated that TAC could no longer support its missions. He also warned “that the Pentagon’s preoccupation with strategic bombing and long-range missiles may soon leave us unprepared to fight a

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<sup>236</sup> John F. Dulles, “Challenge and Response in United States Policy” in *Foreign Affairs*, October 1957, 24.

<sup>237</sup> General O. P. Weyland, “Air War College Presentation” given on 18 February 1959, text located at the United States Air Force Historical Research Agency, Maxwell AFB, Ala, call number, K239.716259-19.

<sup>238</sup> Ibid.

<sup>239</sup> As quoted in Futrell, *Ideas*, 461.

<sup>240</sup> Ibid., 461 – 2.

limited war.”<sup>241</sup> General Weyland’s power had dropped substantially and as such he could not influence the decisions related to tactical airpower procurement.

By the spring of 1958, both the Navy and Marine Corps leadership shifted their security policy position to that of Generals Taylor and Weyland. Navy leadership agreed in principle to Taylor’s premise, but was reluctant to commit. The reason was that US admirals saw great potential in nuclear-powered submarines and underwater-launched nuclear missiles.<sup>242</sup> Notwithstanding the Navy’s future however, the three services agreed to the national policy change that reflected nuclear parity with the Soviets and established finite limits on nuclear power. According to Taylor, the Air Force still rejected the idea and clung to the policy of Massive Retaliation.<sup>243</sup> The ensuing debates were again elevated first to the Secretary of Defense and then the National Security Council. Again, General Taylor presented his views in both meetings, this time with the support of the Navy and Marine Corps. After briefing his concept in considerable detail, both Generals Twining and White supplied the Air Force position. The Air Force point of view remained the status quo as far national security was concerned. Secretary of State Dulles did not provide the strong support that Taylor thought was likely.<sup>244</sup> The final decision was that there would be no change in the national security strategy. The formulation of the 1960 budget was to be based on the same strategy as the previous years. The Air Force and strategic nuclear primacy prevailed as the dominant force until the end of the Eisenhower Administration. In 1961, General LeMay became Chief of Staff of the Air Force. By October, LeMay had replaced the last of the fighter general

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<sup>241</sup> As quoted in Worden, 85.

<sup>242</sup> Taylor, 58.

<sup>243</sup> Ibid.

<sup>244</sup> Ibid., 65.

commanders with bomber advocates such as General Frank F. Everest (TAC) and General Frederic H. Smith Jr. (USAFE). The outcome was an Air Force, which had all the operational commanders and a vast majority of the key Air Staff positions as “ardent bomber generals.”<sup>245</sup> Consequently, tactical airpower would not see any increases in funding or emphasis until the Kennedy Administration took office.

### **Model III Analysis**

A Model III analysis reveals that the key decisions related to the development and procurement of airpower (tactical or otherwise) was significantly effected by the prominent individuals whose job positions placed them in the critical action-channels. Of the four-star generals, those with duties directly related to the current national security strategy of Massive Retaliation had the greatest influence. Furthermore, a strong personality, combined with wartime experience and a willingness to assert his power, produced substantial results for General LeMay. Although General Weyland possessed both wartime experience and a strong personality, he was not in a position to significantly influence decision-making that corresponded to the strategy of Massive Retaliation.

The strong parochial biases and perceptions of an institution that emphasized strategic bombing as the proper application of airpower also favored SAC and LeMay. Despite the fact that tactical airpower provided important contributions to both World War Two and the Korean War, tactical airpower did not neatly fit into the current airpower theory. Moreover, given the stakes of national security, it is easy to understand why Air Force leadership was principally concerned with deterring the worst-case threat to America. It is not as easy to comprehend however, why Generals Twining, White, and

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<sup>245</sup> Worden, 89.

LeMay continued to support a force structure of predominantly strategic nuclear assets vice a balanced force structure as President Eisenhower had requested. There was so much credible evidence present to demonstrate that the strategy of Massive Retaliation had failed to provide credible deterrence for war below general nuclear war. Furthermore, the Air Force Chiefs of Staff stood alone against the other services in their view as to the correct course for American defense strategy. One plausible Model III explanation can be found in the central premise of Allison's third construct—power to control not only the action-channels, but also the key issues that flowed along those channels matter the most. To acquiesce on the policy of Massive Retaliation, meant that the chiefs had to relinquish a portion of their strategic nuclear power for more conventional tactical power. The Army generals and Navy admirals stood to gain from a change in policy. By permitting a policy change, the chiefs of staff would be saying that forces other than strategic airpower were essential for deterrence. This change would then entail a reduction in money and emphasis for strategic airpower resulting in a decrease of power and influence. Moreover, to give up power would also result in questioning the rise to power and the independence that the post-World War Two Air Force leadership had propagated so vigorously. Too, the rise of Soviet nuclear power had much to do with these changes, as did the restoration of the economic health of Europe.

Finally, although President Eisenhower possessed the ultimate responsibility for ensuring the survival of the United States, he relied upon his service chiefs to provide invaluable advice for national security issues. As stated earlier, the president had a twofold requirement for the Defense Department—preparedness for general war and lesser hostile actions. Eisenhower also strongly desired a balanced budget. The Air

Force chiefs of staff during the period in question focused solely on general war and presumed that strategic nuclear airpower could also contend with limited wars. By dogmatically following the strategy of Massive Retaliation and denying the strategy of flexible response during the later half of the 1950s, the Air Force chiefs could not adequately address conventional tactical airpower, which would become so critical in the Vietnam War. In spite of overwhelming counter-arguments from TAC and the other services, the USAF chiefs of staff maintained their position and therefore their power to the detriment of conventional tactical airpower.

One can speculate that had senior Air Force leaders advocated a more balanced approach for developing and procuring airpower (strategic and tactical), a more comprehensive deterrence and war-fighting strategy may have evolved during the 1950s. Furthermore, had the Air Force (and the other services) approached strategy making with the premise of equality among the services, there may have been less of a desire to be the dominant service. In General Weyland's words: "All fighting services are essential in a theater of operations. No one service exists solely for the support of another. Rather each force—air, ground or sea—contribute its optimum and specialized capabilities toward achieving the over-all mission of the theater commander."<sup>246</sup> If one accepts the mandate that the Air Force Chiefs of Staff (Generals Twining, White, and LeMay) should have provided the best possible advice to national command authorities, then the parochial advice (or refrain from providing balanced advice) that the Chiefs provided can only be considered at best *prejudicial counsel*. Balanced guidance would have meant developing forces that could contend with a broader spectrum of conflict, which would have translated into a more credible deterrent and war-fighting capability similar to what

the Air Force procured after 1965. By not providing balanced guidance from 1953 to 1961, senior Air Force leadership restricted the development of conventional tactical airpower, which proved lacking during the initial stages of the Vietnam War and consequently resulted in a unnecessary loss of life and resources.

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<sup>246</sup> General O. P. Weyland, "Tactical Airpower Worldwide" in *Air Force Magazine*, July 1955, 38.

## **Chapter 6**

### **CONCLUSIONS**

In the preceding chapters, the question of whether or not and to what extent the United States Air Force neglected tactical airpower between the Korean and Vietnam Wars was examined from three different analytical perspectives. While each chapter alone does not complete the answer, each provides supportive evidence as to the reasons that contribute to an overall answer. In an attempt to explain why a decision occurred during the 1950s, each of Allison's three models offer alternative methods or points of view in order to investigate the problem. Each construct consists of a set of assumptions and categories that influence how one may approach an answer. Three different levels of examination produced varying conclusions, which when combined together furnish a more comprehensive answer than any one framework taken individually.

The Model I analysis offered conclusions based on choices made at the grand and strategic levels. According to the first framework, as a result of the decision-making process during the 1950s, the United States accumulated alternative courses of action and ranked them according to their value or consequence. America's rational choice consisted of simply choosing the best-perceived alternative and that choice was nuclear deterrence. Only the strategy of Massive Retaliation could provide viable deterrence against communist aggression while minimizing the overall price to the United States,



which contributed to President Eisenhower's stated policy. In such a national security strategy, a Model I answer postulates that conventional tactical airpower was too expensive and not likely to contribute substantially to the national policy. Therefore, tactical airpower was given lower priority than the dominant strategic airpower weapon systems.

Allison's second model provided substantially different conclusions than the first. According to the second framework, in spite of the strategic emphasis on Massive Retaliation, a plethora of organizations positively (albeit minimally) influenced tactical airpower as a result of their standard operating procedures. Organizations such as TAC, the NACA, and the ARDC offered several improvements to tactical conventional airpower. During the 1950s, aircraft and weapons were developed and produced that contributed to the tactical missions. The Model II examination also showed how many of the Air Force organizations also tended to *satisfice* or compromise on their decisions regarding tactical aircraft and weapons, which resulted in the production of weapon systems that may not have been the best possible contribution to tactical airpower. Although the F-105 and AIM-4 Falcon (as with others) were marginally successful, they were not designed for conventional warfare. More importantly, the standard operating procedures that were in place or created during the period in question led to the ability to rapidly shift emphasis to these weapons systems and produce more viable systems witnessed in the latter 1960s and 1970s. Tactical training (although tailored toward a European conflict) increased in frequency and enabled tactical airpower to achieve noteworthy advances during the 1950s and early 1960s. Despite interservice rivalries at the organizational level, the Air Force's routines helped ensure that conventional combat

power was equal to if not better than any other air force at the tactical level. A Model II inquiry indicated that at the organizational level, tactical conventional airpower was not entirely neglected.

A model III analysis suggested yet a third conclusion, unlike the first two. This examination showed that the key decisions related to the development and procurement of airpower were significantly influenced by the prominent individuals whose job positions placed them in the critical action-channels. Of the four-star generals discussed, those who had duties directly related to the current national security strategy of Massive Retaliation had the greatest influence. Furthermore, a strong personality combined with wartime experience and the willingness to use his power produced substantial results for General LeMay. The strong parochial biases and perceptions of an institution that emphasized strategic bombing as the proper application of airpower also favored SAC and LeMay. General LeMay and the other USAF chiefs of staff during the period in question were able to maintain their power despite credible alternatives proposed by the other service chiefs and TAC Commander General Weyland. Power to control not only the action-channels, but also the prevalent issues and funding that flowed along those channels matter most. Despite President Eisenhower's twofold objective on possessing forces to contend with general nuclear war and conflicts below general war, the Air Force leadership primarily promoted strategic airpower to handle the worst-case scenario. In an effort not to diminish their power, the Air Force chiefs of staff during the 1950 and early 1960s presented prejudiced counsel to the National Command Authorities and Congress. That biased advice resulted in airpower decisions, which overwhelmingly favored

strategic missions and led to the decline of not only tactical airpower, but also the leaders who advocated tactical conventional airpower.

From the above summary of the three levels of analysis, one can safely conclude that tactical conventional airpower was impeded between the Korean and Vietnam Wars. At the systemic level, national security policy and constrained fiscal expenditures prevented conventional tactical airpower from maintaining its past position of importance within the Air Force composition. Even at the organizational level, emphasis on strategic nuclear weapons drew the much-needed specialists and funding away from conventional tactical airpower programs (tactical airpower received from two to four percent of the Air Force budget between 1955 to 1958). Of the weapon systems that did support tactical conventional missions, many sub-organizations tended to compromise on their final products, resulting in systems, which nominally advanced conventional tactical airpower. Moreover, the tactical training, which was TAC's finest accomplishment, did not occur often enough nor adequately emphasized conventional weapons, resulting in only marginal advances for tactical airpower employment. Finally, at the individual level, the parochial biases on the three USAF chiefs of staff led to the slanted counsel offered to the national command authorities and Congress. Despite the fact that Eisenhower requested forces to contend with both general war and limited war, the Air Force generals (with the exception of Weyland) were deficient in their duties to sufficiently advise the NCA on the proper Air Force structure, which should contend with the entire spectrum conflict. Unfortunately, this biased advice repressed tactical conventional airpower in order to promote strategic nuclear missions. From 1953 to 1961, tactical conventional airpower was placed a distant second behind the strategic nuclear missions of the day. However,

more than any other factor, senior Air Force leadership bears the responsibility for the impedance of tactical conventional airpower, which resulted in a greater than necessary loss of lives and resources during the opening months of the air war in Vietnam.

### **Implications for the Future**

Current military strategists and leaders oftentimes do not possess the necessary experience or vision to accurately plan for future contingencies or war. Therefore, these individuals must study the past in order to learn history's "lessons" within the context of the time studied. By studying historical lessons, current students of the military art may gain a portion of the experience that is necessary for planning and avoid the pitfalls of the past. This thesis offers several (but not all of the) lessons from the period in question, which have implications for the future. The 1950s offer valuable insights into the development and procurement of airpower, which provide lessons for future policy planning.

First, policy decisions constructed in peacetime have significant impact on procurement outcomes, which in turn affect wartime operations. With the growing perception that future conflict will tend to be short (weeks or months versus years), there may not be time during war to obtain weapon systems needed for that war. Therefore, Air Force weapon systems should be procured so as to be able to contend with the broadest spectrum of conflict within the fiscal constraints of the DoD budget. Invariably, military fiscal desires will be greater than the Congressionally mandated financial outlays. Consequently, Air Force strategists should ensure that peacetime procurement decisions are crafted to balance war-fighting capabilities within the limits of airpower.

Air Force capabilities should be structured to deter and win military contingencies from general war to limited or small-scale conflicts.

Second, (and related to the first implication) Air Force policy should not be based upon only one weapon system or concept of war. During the period of Massive Retaliation, the Air Force solely relied upon that policy to guide its decision-making for war. By relying upon that policy, senior leaders postulated that nuclear forces were all that were necessary to contend not only with general war, but also anything less than general war. The lack of emphasis on tactical conventional airpower caused deficiencies in fighter aircraft designs, inadequacies in conventional munitions, and sub-optimal tactical training. These deficiencies, consequently resulted in a greater than necessary loss of life and resources. Future strategists should not base overall procurement policy on weapon systems that restrict future airpower employment options, which in turn constrain airpower's contribution to national security strategy. For example, if future Air Force procurement decisions include exclusive investments in stealth technologies and weapon systems at the expense of non-stealth alternatives, then those decisions risk possibly constraining airpower's capabilities in war when a counter to stealth is developed. Similarly, investing predominantly in unmanned combat aerial vehicles (UCAVs) as the sole replacement for manned aircraft may also risk limiting the future application of airpower in some portions of the spectrum of conflict.

Third, parochial priorities can hinder strategic operations that are designed to achieve national security objectives. There should not be a desire to place the Air Force (or any service) above the rest in order to ensure funding priority. Rather, each service should work jointly to ensure the Department of Defense as a whole can meet the objectives of

national command authorities. The JCS should be the primary agent responsible for overall DoD strategic procurement policy, which should be divorced from parochial service biases. There are areas where one service may have an expertise over the other services (e.g. air superiority, amphibious employment, or underwater operations), but that expertise is only one aspect of warfare. To ensure the broadest spectrum of warfare is prepared for, each service should contribute to the total spectrum in various ways.

Fourth, and most important, the individual (such as LeMay) remains the vital element in the Air Force war-making capability. In this case, Model III explanations appear to be the key factors affecting tactical conventional airpower decision-making during the 1950s. At the highest levels, USAF generals determine the policy of the service and therefore the weapon systems developed and procured. These individuals should base their decisions on past combat experience, future capabilities, and the needs of the nation. At lower levels, individuals should continue to exhaustively research the possible improvements to current systems. Standard operating procedures are great for ensuring complex processes are conducted on a routine basis, but that is the minimum effort required. All means should be sought to improve current capabilities. At the lowest level, every individual who contributes to the war-fighting ability of the Air Force should practice and train in the most realistic manner feasible. In each war during the twentieth century, training (not technology) set American airpower above its rivals. Reduced realistic training opportunities as a result of extended operations in “no-fly zones” or diminished funding for exercises decreases American airpower’s *raison d’être*. Often, realistic training ensure US airpower remains far above any potential rival.

If the United States Air Force is committed as an institution to continued excellence, then we should study our history and learn both the commendable and unsound aspects of our past in order to succeed in the future. War is a contest of extreme importance; the survival of the nation may be at stake. At the minimum, valuable lives and resources may be lost. Preparation for war in peacetime is as equally momentous. The weapon systems developed and procured will influence the outcome of future wars. The achievement of nationally directed military objectives deserve the most balanced advice and approach for successful accomplishment. The individual remains the critical link in the long chain of developing and employing complex weapon systems. Victory depends on exceptional people, technology, and concepts. Humans are not perfect. Combat provides the best school for learning. Without combat, history endures as the first step toward gaining that experience. Every military strategist should study history so those past mistakes do not become repeated in future conflicts.

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